WIRING DIAGRAMS
PARTS LISTING

FOR

SERIES

HA

AUTOMATIC DEMAND CONTROLS

FOR ONAN
SERVICE ORGANIZATION
USE ONLY
(Factory...Distributor...Dealer)

ONAN
1400 73RD AVENUE N.E. • MINNEAPOLIS, MINNESOTA 55432
A DIVISION OF ONAN CORPORATION

907-0012

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WIRING DIAGRAMS/PARTS LISTING
FOR
HA AUTOMATIC DEMAND CONTROLS

All of the wiring diagrams apply to HA automatic demand controls and should be used for service and parts information. Before looking up any diagrams, read the description and explanations below.

HA controls use a decimal system model designation previously not used. As an example, the designation 7.5HA was formerly 705HA and 15.0HA was formerly 15HA. Because Spec B controls had both designations, use the decimal system when looking up the wiring diagrams for the 7.5 and 15 KW controls. Therefore, to find the wiring diagram for a Spec B 705HA-21 control, use the Spec B 7.5HA-21 model designation.

NOTE: *The decimal system applies to all of the Spec C controls but to none of the Spec A controls.*

When using the wiring diagrams, remember all components are shown in their de-energized position unless otherwise noted. To find the diagram in question, proceed to the index page shown below corresponding with the control's specification letter (last letter of model designation as shown on control nameplate).

Control Specification Letter	See Index Page
A	2
B	34
C	60

NOTE: *For service and maintenance information of HA controls, see service bulletin "Control 13".*

INDEX
FOR
SPEC A CONTROLS

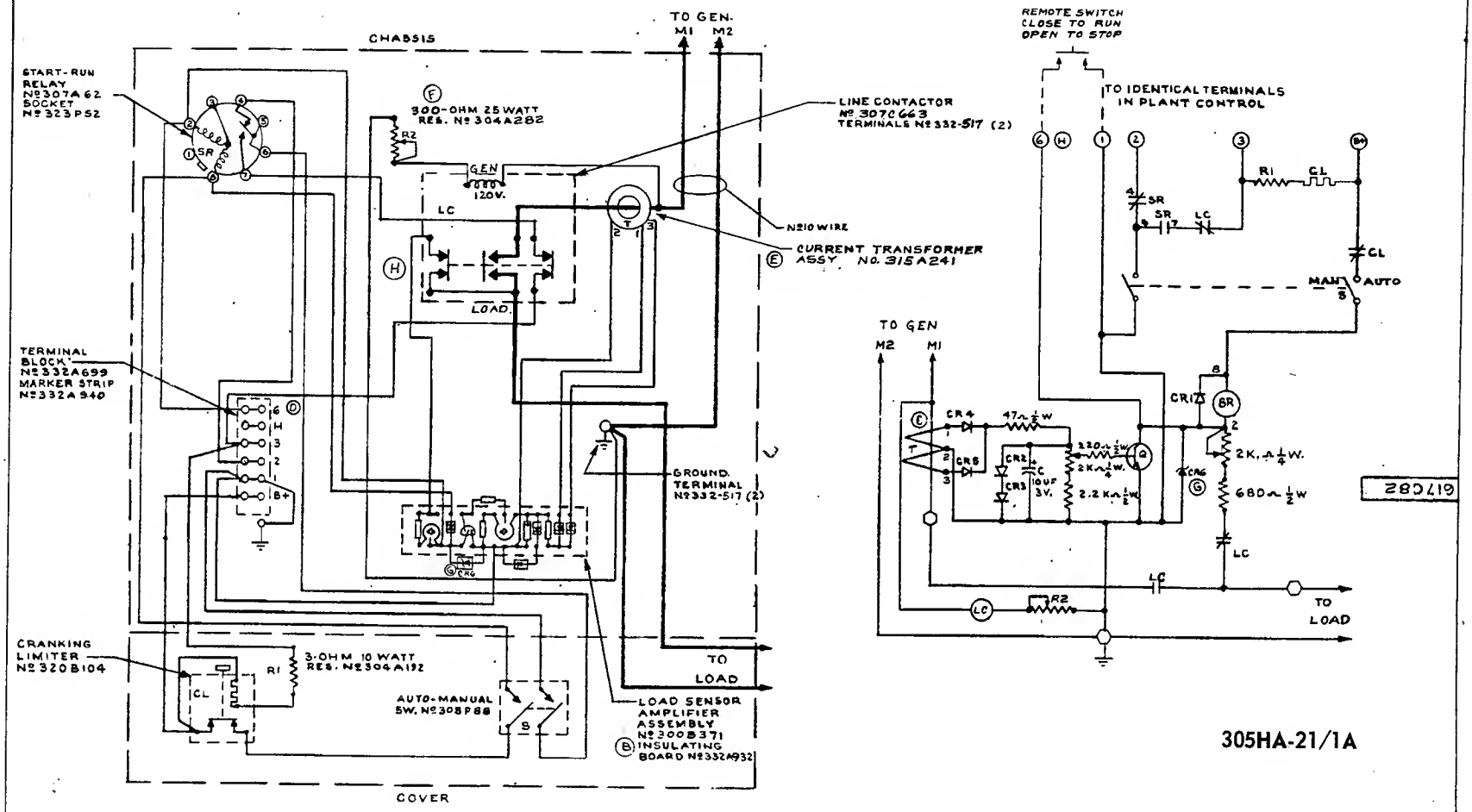
Find the appropriate model and proceed to the indicated page for the wiring diagram.

617C82

PICTORIAL

SCHEMATIC

305HA-21/1A



280719

305HA-21/1A

NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER.

LET	REVISION	CKD	DATE
H	WIRE CONN. CORRECTED	JV	6-25-66
G	ADDED CR6	JV	4-7-66
F	WAS NO. 304A5	JV	2-11-66
E	MOVED "T" & WAS NO 315A233	JV	2-7-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED "T" FROM GEN. SIDE	JV	9-14-65
B	WAS Nº 332A707	JV	6-4-65
A	WAS BOX ASSY. 301B2588	JV	6-4-65

Onan DIVISION OF STUDEBAKER CORPORATION

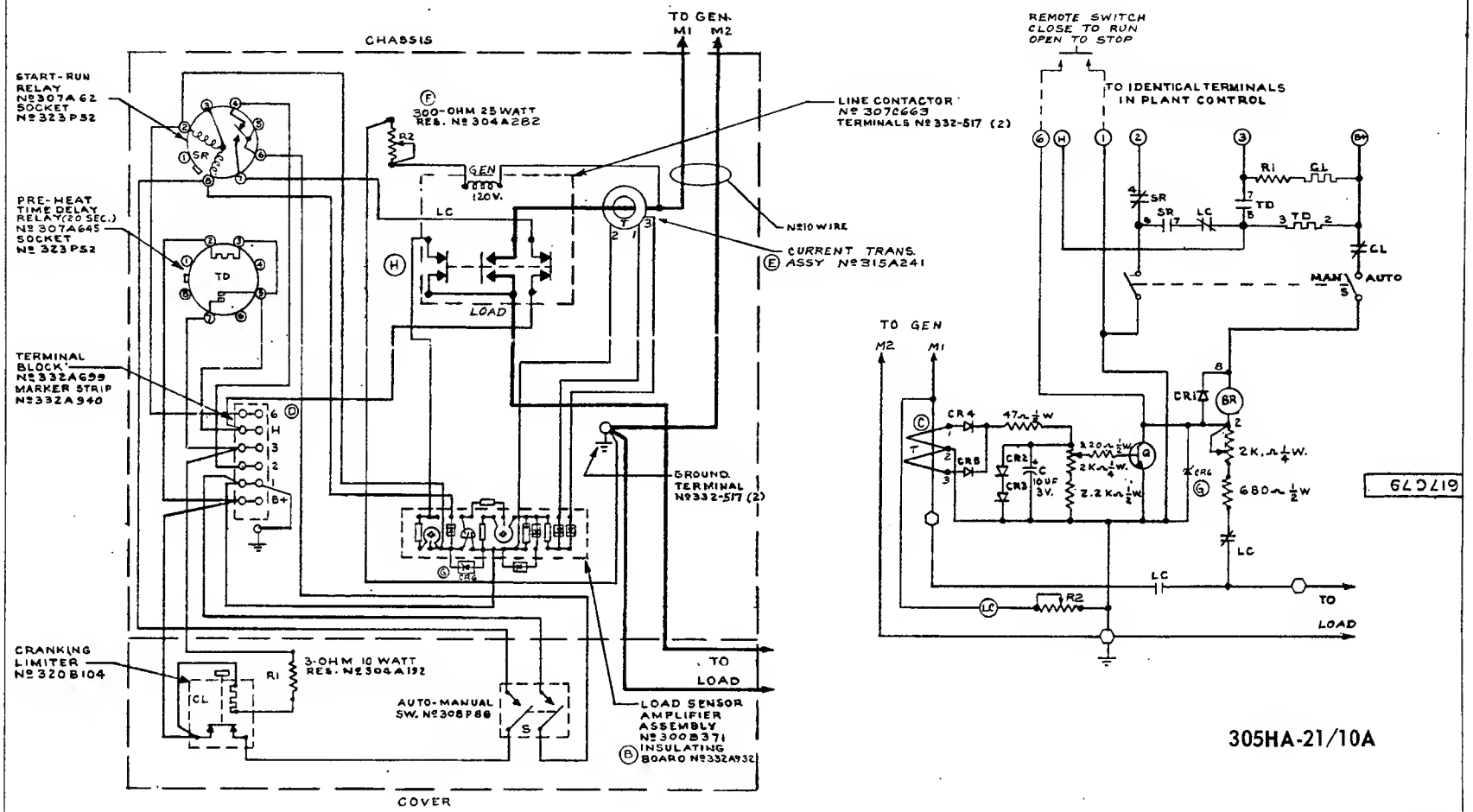
MODEL	DATE	DR	CKD
305HA-21/1A	5-5-65	W.J.B	JV, WJB
120 VOLT 1 PH. 2 WIRE 50-60~	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
12 V. CRANKING	DWG NO: 617C82		

617C79

PICTORIAL

SCHEMATIC

305HA-21/10A



NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER.

LTR	REVISION	BY	DATE
H	WIRE CONN. CHANGED	JV	6-25-66
G	ADDED CR6	JV	4-7-66
F	WAS Nº 304A5	JV	2-11-66
E	MOVED "T" WAS Nº315A233	JV	2-7-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED "T" FROM GEN SIDE	JV	9-14-65
B	WAS 332A707	JV	6-4-65
A	WAS BOX ASSY. 301B2588	JV	6-4-65

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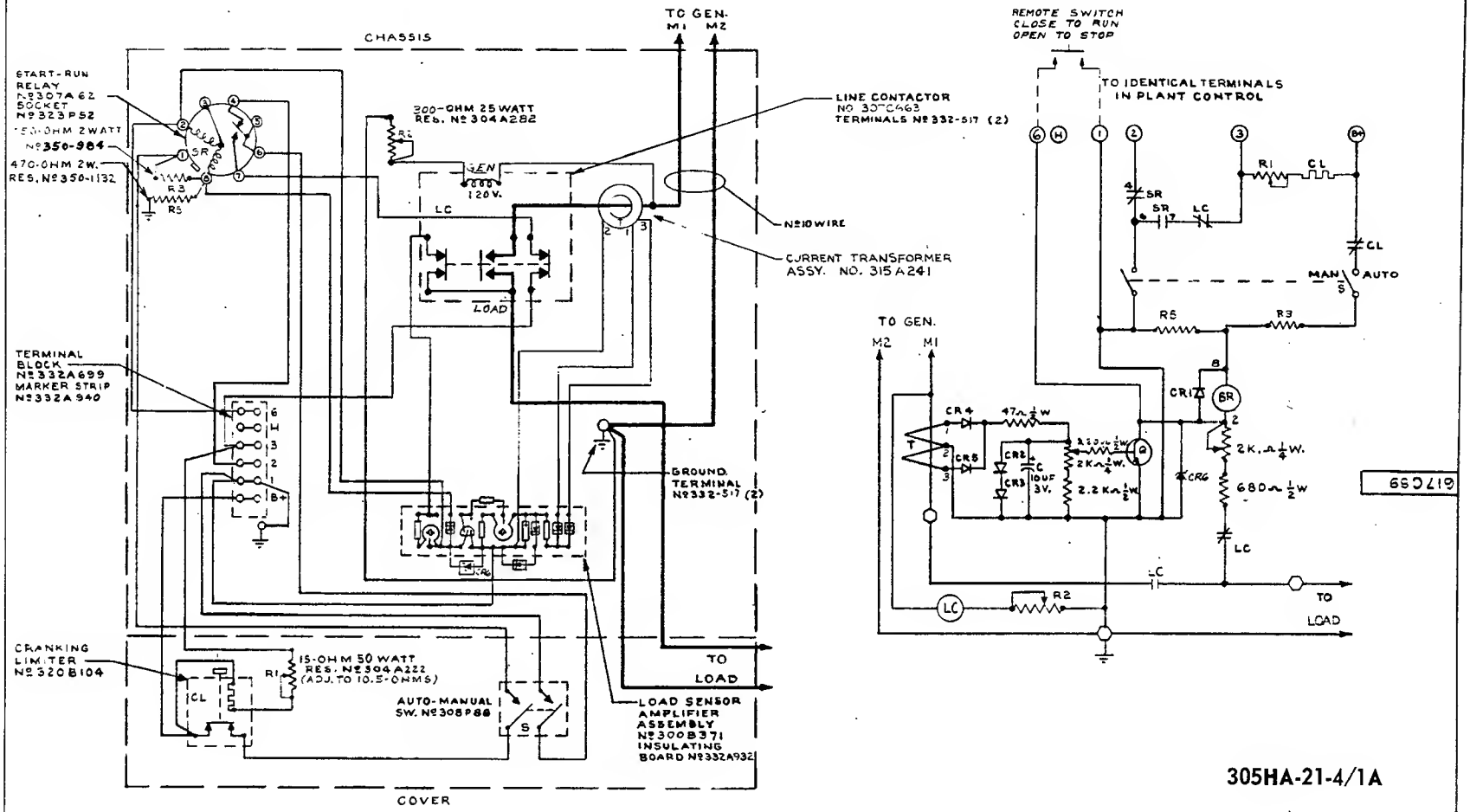
MODEL	DATE	DR	CKD
305HA-21/10A	4-16-65	CKH	JV, WJB
120 VOLT 1 PH. 2 WIRE 50-60~	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
12 V. CRANKING	DWG NO: 617C79		

617 C 89

PICTORIAL

SCHEMATIC

305 HA-21-4/1A



617 C89

305HA-21-4/1A

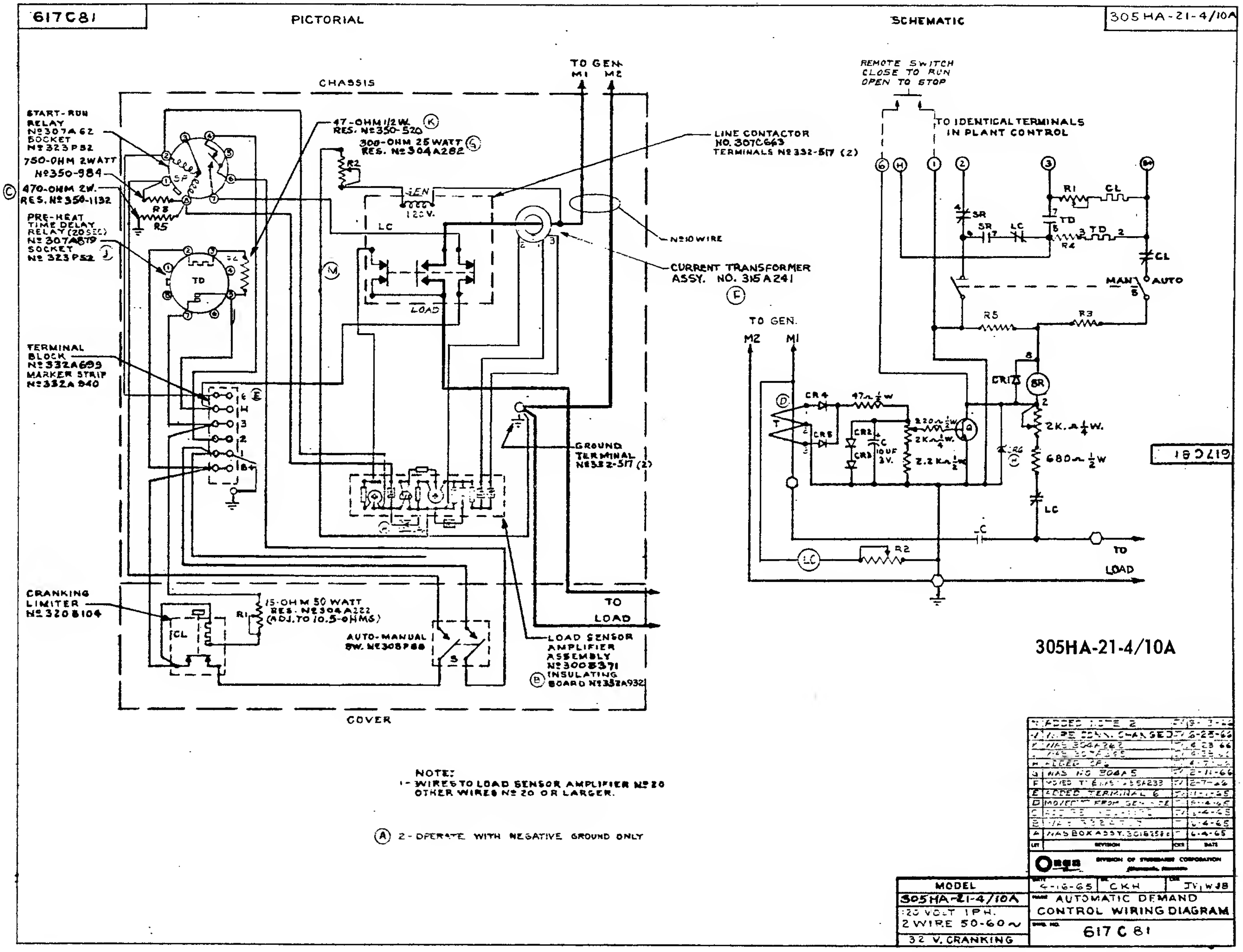
NOTE:
1 - WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER.

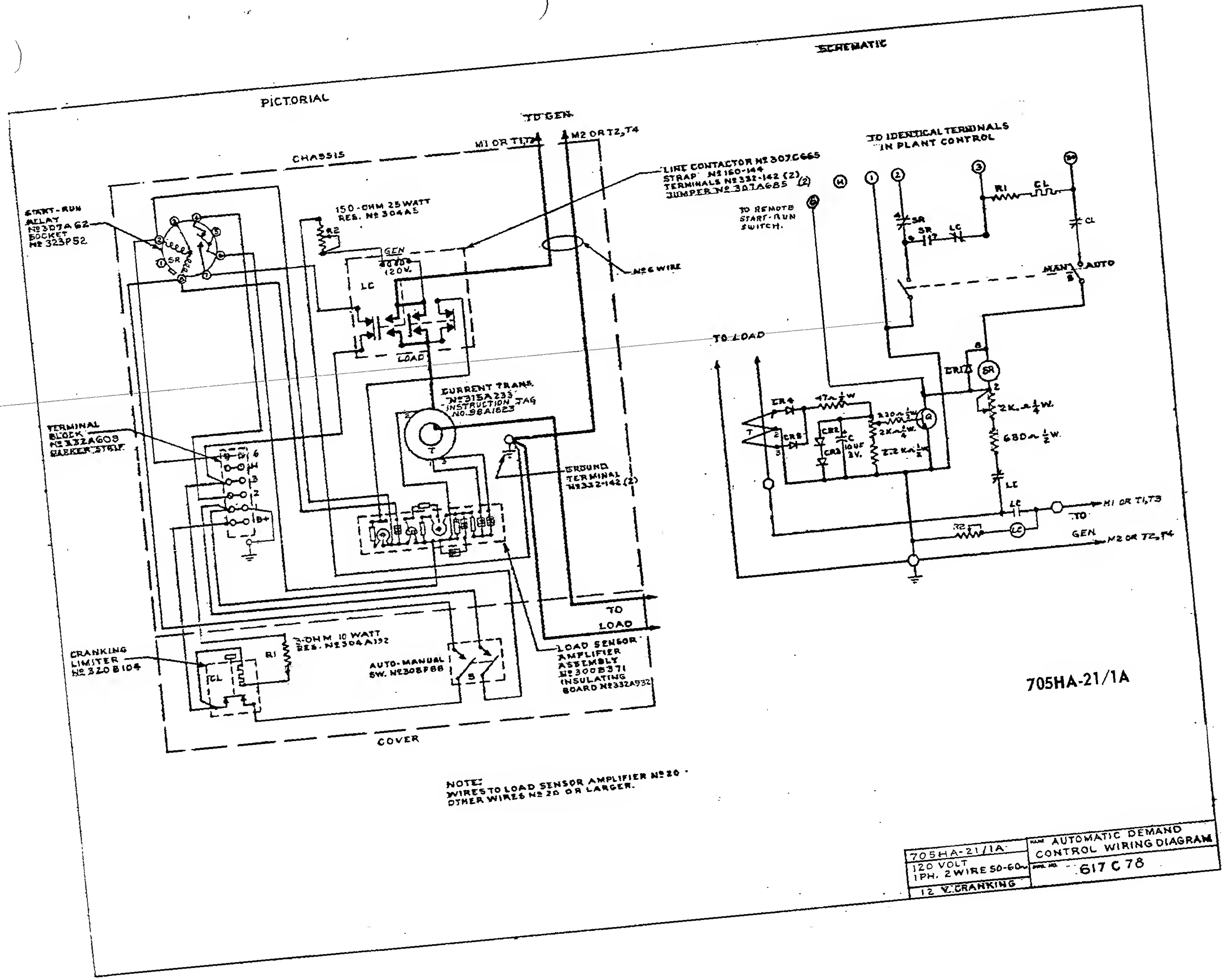
(A) 2 - OPERATE WITH NEGATIVE GROUND ONLY

LTR	REVISION	CKR	DATE
A	ADDED NOTE 2		9-28-66

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL	DATE	DR	CKR	APP
305HA-21-4/1A	7-28-66	CDR	—	—
230 VOLT 1 PH. 2 WIRE 50-60 ~	MAINT	AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
32 V. CRANKING	DWG NO	617 C 89		


617C81
PICTORIAL
SCHEMATIC
305HA-21-4/10A
CHASSIS
TO GEN. M1 M2
START-RUN RELAY Nº307A62 SOCKET Nº323P52
750-OHM 2WATT Nº350-984
470-OHM 2W. RES. Nº350-1132
PRE-HEAT TIME DELAY RELAY (20SEC) Nº307A819 SOCKET Nº323P52
47-OHM 1/2W. RES. Nº350-520
300-OHM 25WATT RES. Nº304A282
LINE CONTACTOR NO. 307C663 TERMINALS Nº332-517 (2)
Nº10 WIRE
CURRENT TRANSFORMER ASSY. NO. 315A241
TERMINAL BLOCK Nº332A699 MARKER STRIP Nº332A940
GROUND TERMINAL Nº332-517 (2)
CRANKING LIMITER Nº320B104
15-OHM 50 WATT RES. Nº304A222 (ADJ. TO 10.5-OHMS)
AUTO-MANUAL SW. Nº308P88
LOAD SENSOR AMPLIFIER ASSEMBLY Nº300B371 INSULATING BOARD Nº332A932
TO LOAD
COVER
REMOTE SWITCH CLOSE TO RUN OPEN TO STOP
TO IDENTICAL TERMINALS IN PLANT CONTROL
MAN AUTO
TO GEN. M2 M1
47Ω-1/2W
2K.Ω-1/4W.
680Ω-1/2W
2.2KΩ-1/2W
10UF 3V.
TO LOAD
NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº20 OTHER WIRES Nº20 OR LARGER.
(A) 2- OPERATE WITH NEGATIVE GROUND ONLY
MODEL
305HA-21-4/10A
120 VOLT 1PH.
2 WIRE 50-60~
32 V. CRANKING
4-16-65 CKH JV, WJB
AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
617C81

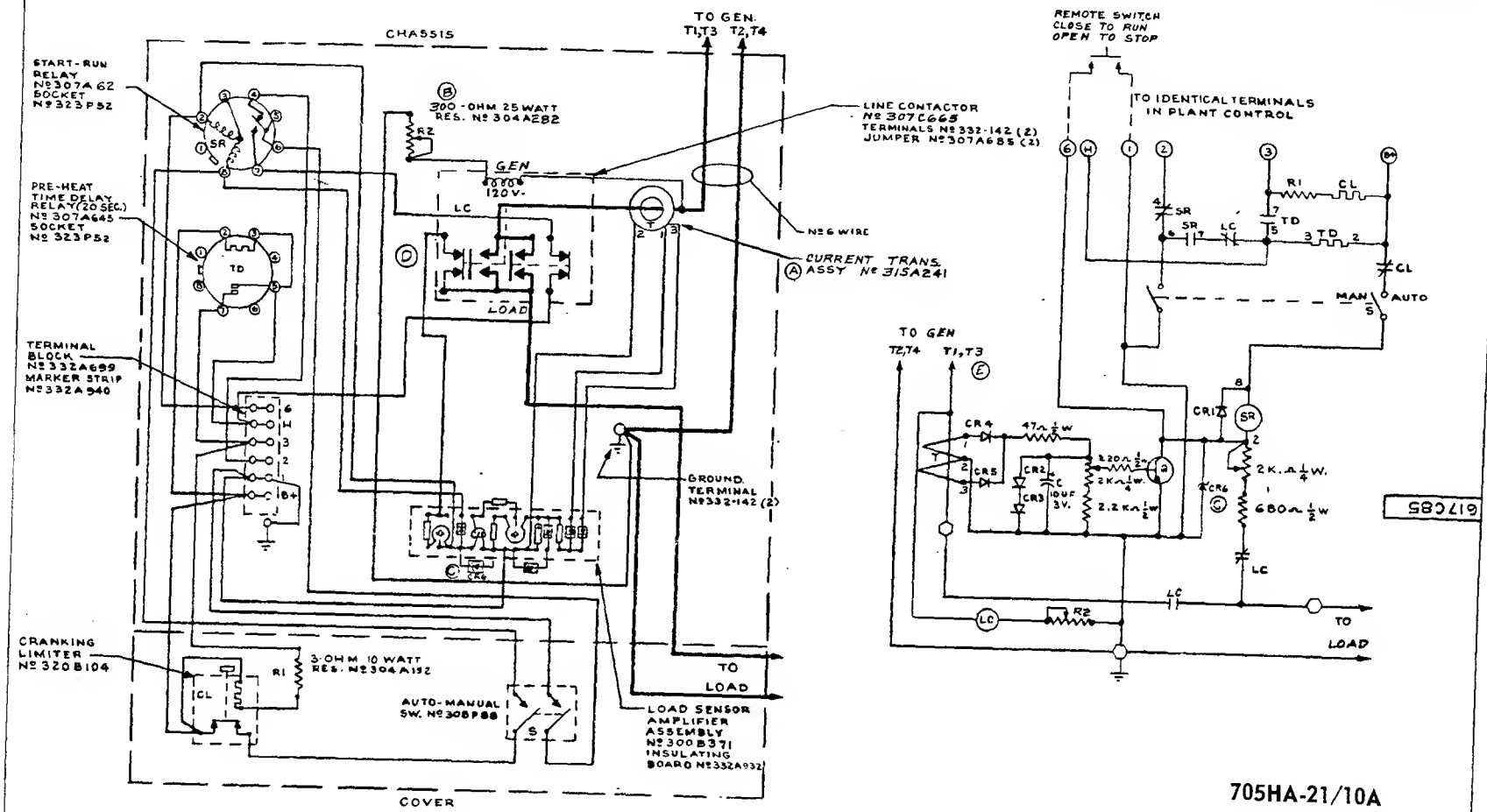

PICTORIAL
SCHEMATIC
TO GEN.
M1 OR T1,T3
M2 OR T2,T4
CHASSIS
COVER
START-RUN RELAY № 307A62 SOCKET № 323P52
150-OHM 25 WATT RES. № 304A5
GEN
LOAD
LC
120V.
LINE CONTACTOR № 307C665 STRAP № 160-144 TERMINALS № 332-142 (2) JUMPER № 307A685 (2)
№ 6 WIRE
CURRENT TRANS. № 315A233 INSTRUCTION TAG NO. 98A1623
GROUND TERMINAL № 332-142 (2)
TERMINAL BLOCK № 332A603 MARKER STRIP
TO LOAD
LOAD SENSOR AMPLIFIER ASSEMBLY № 300B371 INSULATING BOARD № 332A932
CRANKING LIMITER № 320B104
3-OHM 10 WATT RES. № 304A192
AUTO-MANUAL SW. № 308P88
TO IDENTICAL TERMINALS IN PLANT CONTROL
TO REMOTE START-RUN SWITCH.
MAN AUTO
2K Ω 1/4 W.
680 Ω 1/2 W.
47 Ω 1/2 W
10 UF 3V.
TO GEN.
705HA-21/1A
NOTE: WIRES TO LOAD SENSOR AMPLIFIER № 20 OTHER WIRES № 20 OR LARGER.
705HA-21/1A
120 VOLT
1PH. 2 WIRE 50-60~
12 V. CRANKING
AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
617C78

617C85

PICTORIAL

SCHEMATIC

7.5 HA-21/10A



705HA-21/10A

617C85

NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº 20
OTHER WIRES Nº 20 OR LARGER.

LET	REVISION	BY	DATE
E	WAS T1, T4	TV	6-6-68
D	A SEE CONN. DIAGRAM	TV	6-27-66
C	ADDED	TV	6-7-66
B	WAS NO 304A5	TV	2-11-66
A	MOVED T & WAS NO 315A233	TV	2-7-66

DIVISION OF STUDEBAKER CORPORATION

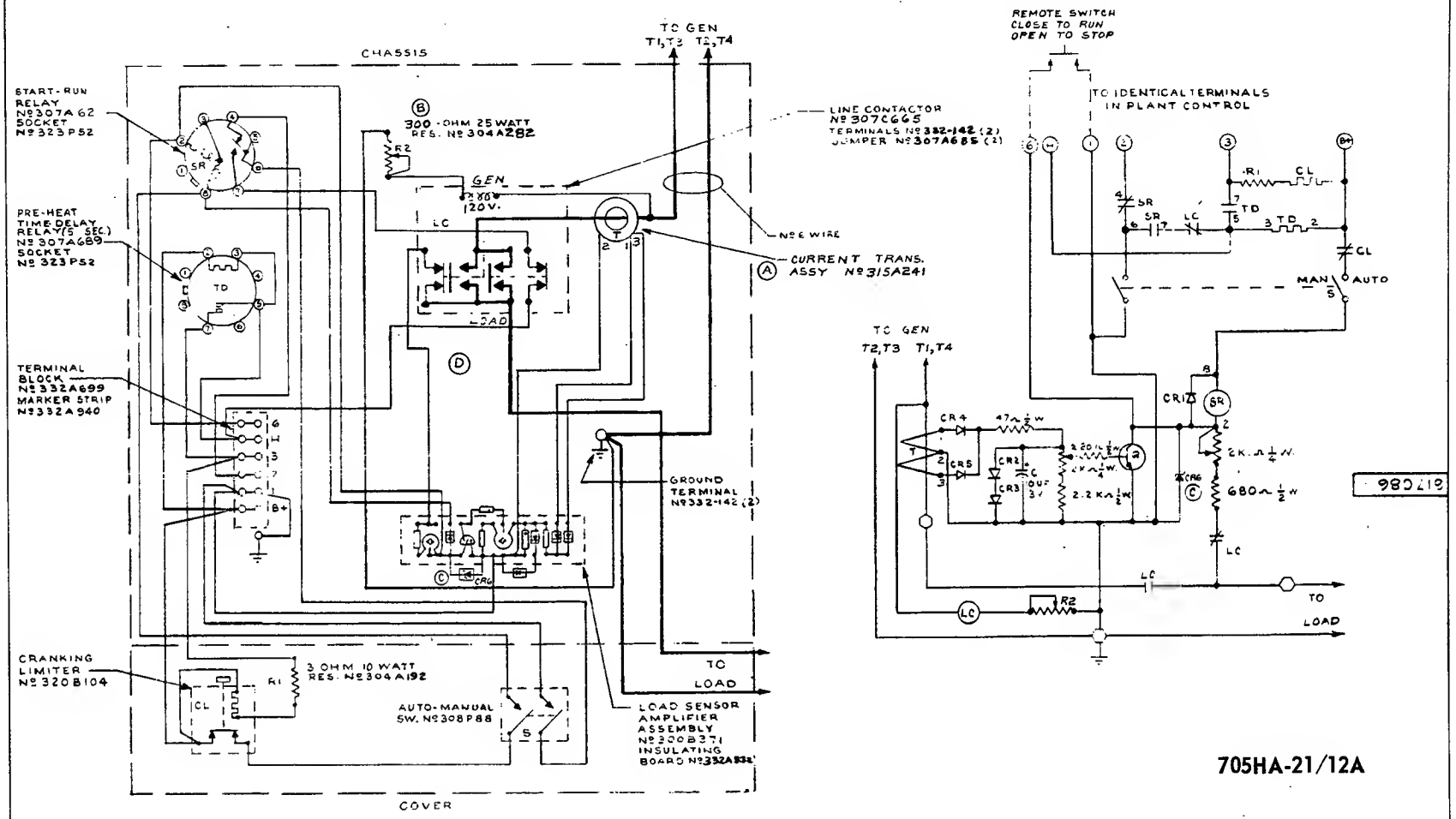
MODEL	DATE	BY	CKD	SHEET
7.5 HA-21/10A	11-20-65	TB	TV	1 OF 1 SHEETS
120 VOLT 1PH. 2WIRE 50-60~	NAME AUTOMATIC DEMAND CONTROL WIRING DIAGRAM			
12 V. CRANKING	DWG NO 617C85			

617C86

PICTORIAL

SCHEMATIC

705 HA-21/12A



705HA-21/12A

617C86

NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER

D	WIRE CONN. CORRECTED	JV	12-22-66
C	ADDED CR6	JV	4-7-66
B	WAS NO 304A5	JV	2-11-66
A	MOVED T & WAS NO 315A233	JV	2-7-66
SET	REVISION	CHK	DATE

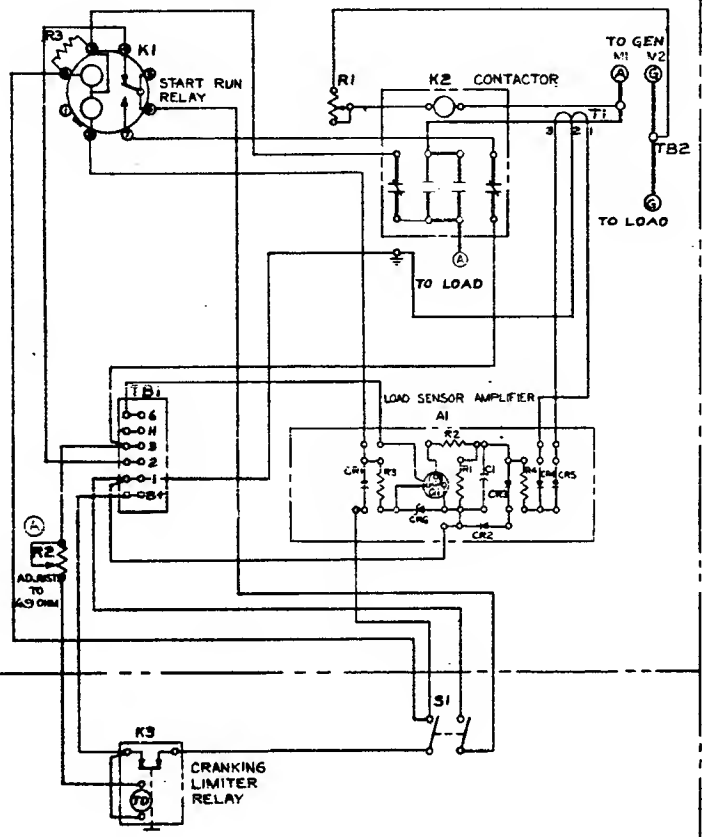
Onan DIVISION OF STUDEBAKER CORPORATION

MODEL	DATE	DR	CHK
705 HA-21/12A	11-20-65	ZB	JV, WB
120 VOLT 1PH. 2WIRE 50-60~	NAME AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
12 V. CRANKING	DWG NO 617 C86		

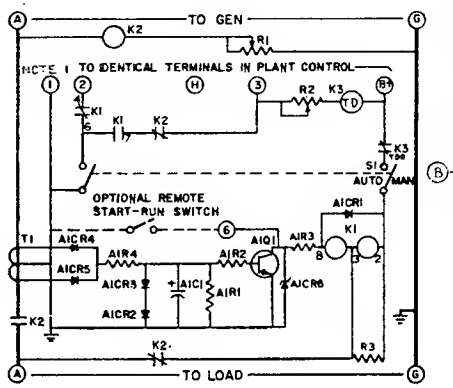
617C108

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF.DES	PART NO.	QTY	DESCRIPTION
A1	300B482	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
(D)	323P380	1	SOCKET
* K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A655	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A262	1	RESISTOR, 300-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY- CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A231	1	RESISTOR, 10-OHM, 25 W
(B)*	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
(E)	334A1890	2.5FT	WIRE-FLEXIBLE NO. 20 AWG
(F)	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 AWG

8012L19

705HA-21-3/1A

NOTES:

1. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

2. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

F	ADDED WIRE NO. 334A1842	[illegible]	5-14-69
E	[illegible] 334A1890	[illegible]	5-14-69
D	WAS 323P382 SOCKET	[illegible]	1-9-67
C	ADDED [illegible]	[illegible]	1-1-67
B	ADDED LABEL [illegible]	[illegible]	1-1-67
A	R2 WAS ADJ. [illegible]	WB	4-20-67

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO.	705HA-21-3/1A
	24 VOLT CRANKING
	120 V., 1PH., 2W., 60/60EY.

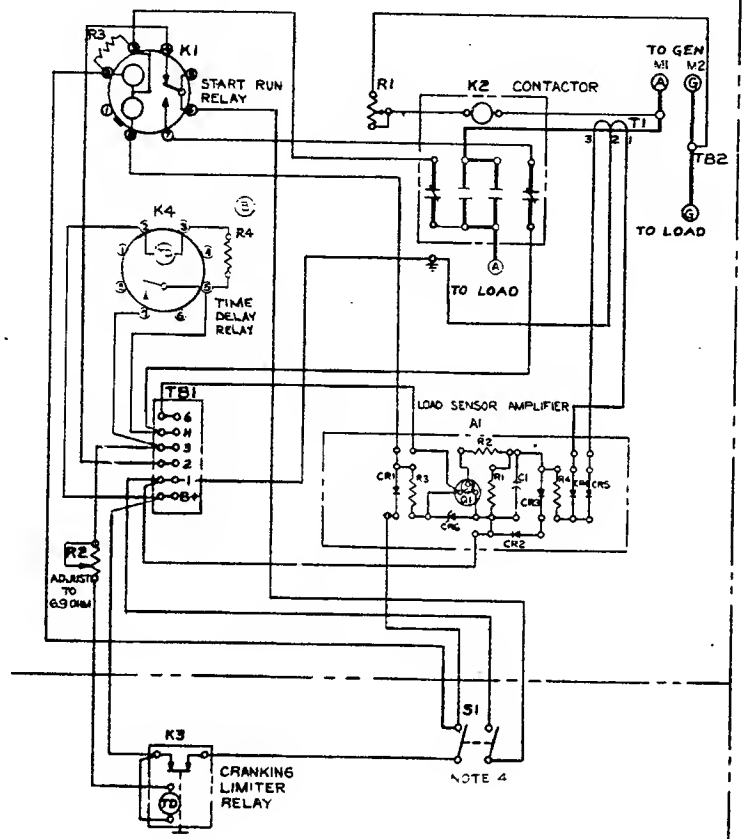
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG. NO. 617C108

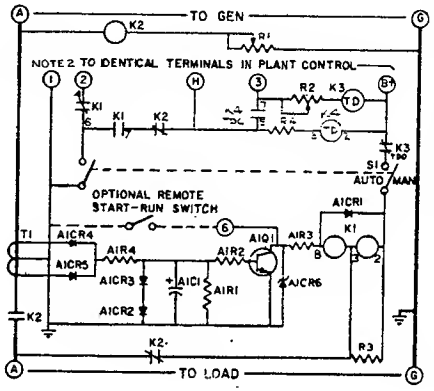
617C115

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.
3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.
4. MOUNT SWITCH WITH FINISHING NUT ON THE FRONT PANEL.

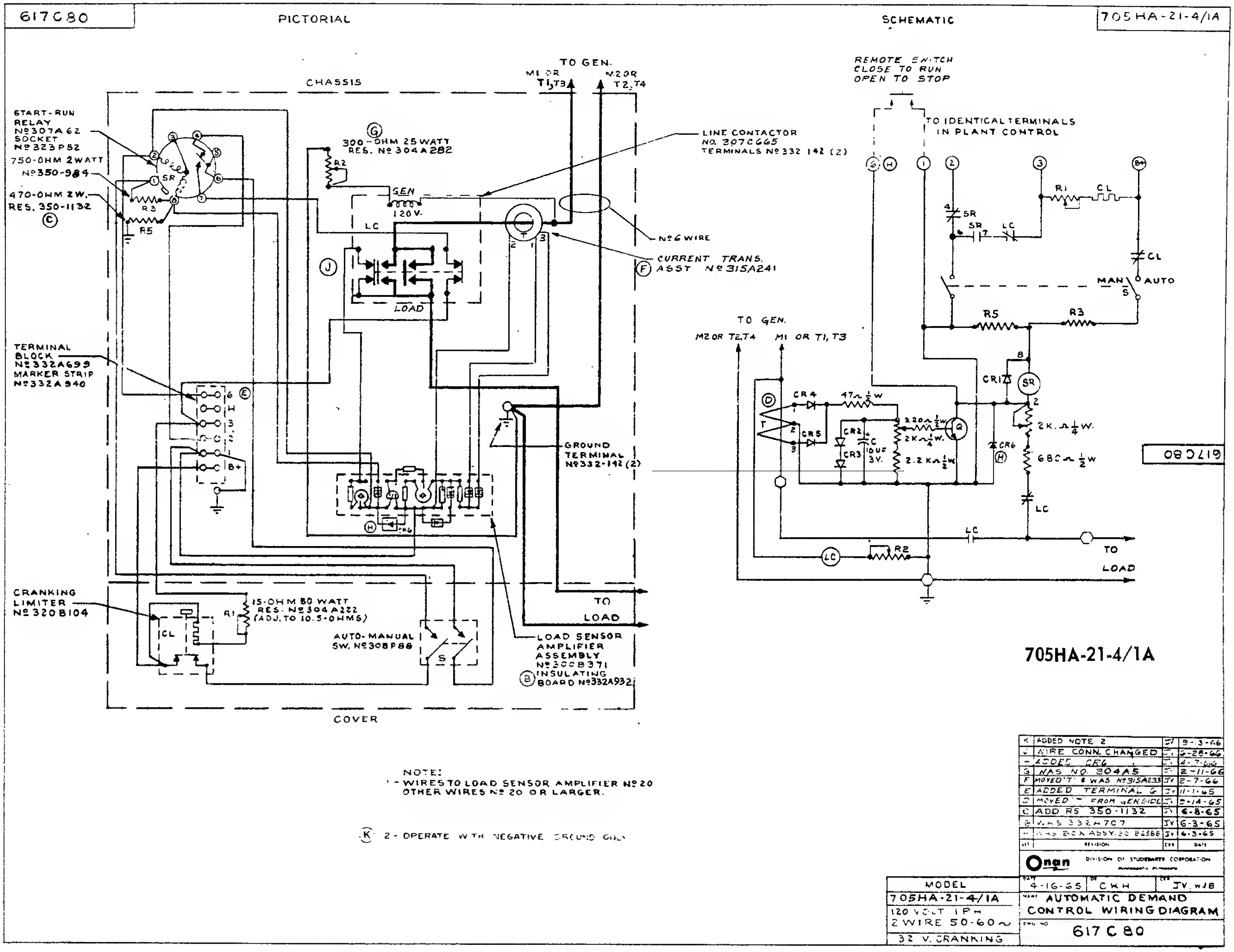
PARTS LIST

REF.DES.	PART NO.	QTY	DESCRIPTION
A1	300B462	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P[illegible]	1	SOCKET
K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY, STARTING (20S)
	323P380	1	SOCKET
R1	304A252	1	RESISTOR, 300-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308PBB	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A231	1	RESISTOR, 10-OHM, [illegible] W
R4	352-114	1	RESISTOR, 62-OHM, 2W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
	98A2045	1	LABEL, CAUTION
	334A1890	2.5 FT	WIRE-FLEXIBLE NO. 20 AWG
	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 AWG

5117C117

705HA-21-3/10A

705HA-21-3/10A	SCHEMATIC & WIRING DIAGRAM
24 VOLT CRANKING	AUTOMATIC DEMAND CONTROL
120 V., 1PH., 2W., 50/60CY.	617C115

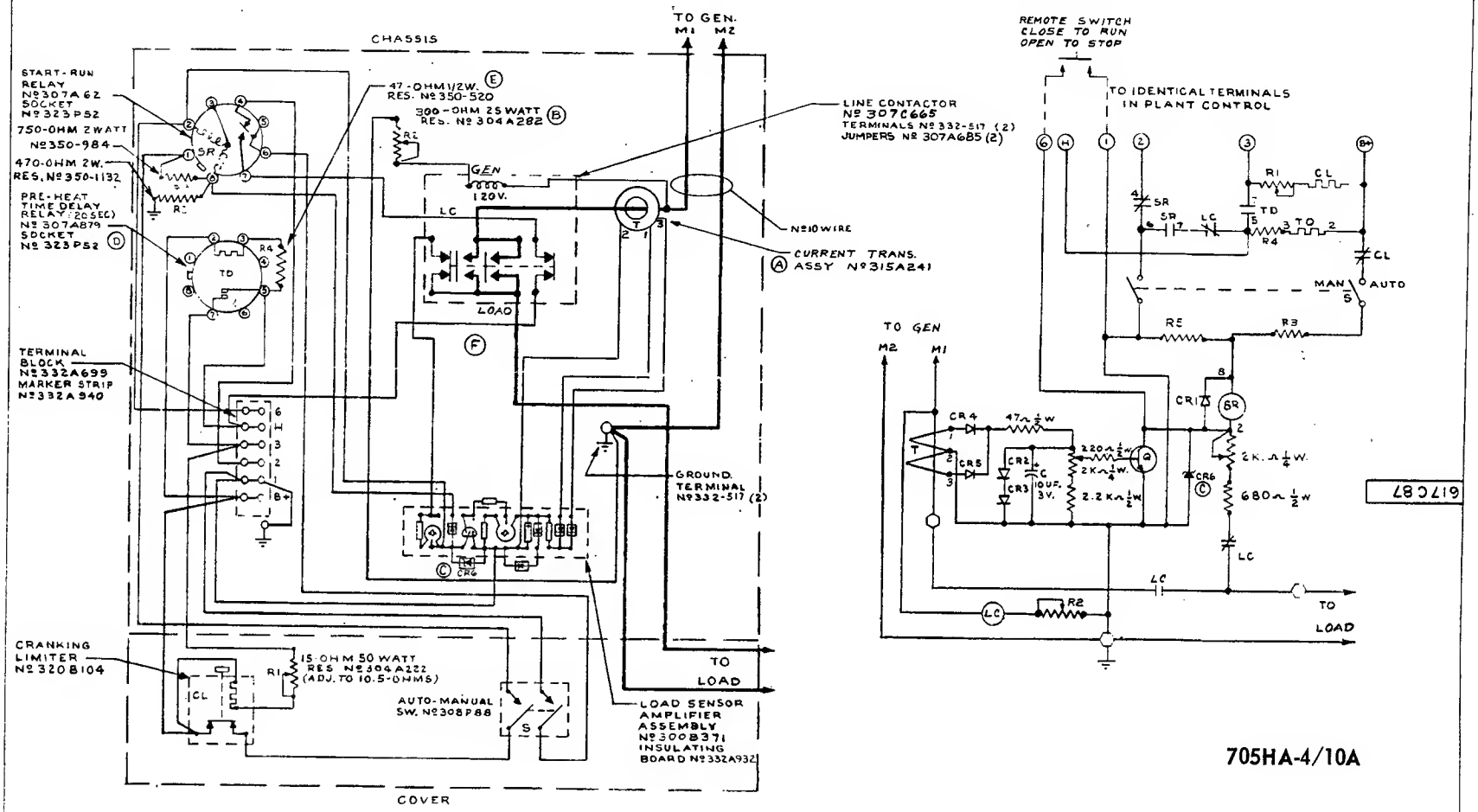

617C80
PICTORIAL
SCHEMATIC
705HA-21-4/1A
CHASSIS
TO GEN.
M1 OR T1,T3
M2 OR T2,T4
START-RUN RELAY No307A62 SOCKET No323P52
750-OHM 2WATT No350-984
470-OHM 2W. RES. 350-1132
300-OHM 25WATT RES. No304A282
GEN
120V.
LC
LOAD
LINE CONTACTOR NO. 307C665 TERMINALS No332 142 (2)
No6 WIRE
CURRENT TRANS. ASSY No315A241
TERMINAL BLOCK No332A699 MARKER STRIP No332A940
GROUND TERMINAL No332-142 (2)
CRANKING LIMITER No320B104
15-OHM 80 WATT RES. No304A222 (ADJ. TO 10.5-OHMS)
AUTO-MANUAL SW. No308P88
TO LOAD
LOAD SENSOR AMPLIFIER ASSEMBLY No300B371
INSULATING BOARD No332A932
COVER
REMOTE SWITCH CLOSE TO RUN OPEN TO STOP
TO IDENTICAL TERMINALS IN PLANT CONTROL
MAN
AUTO
TO GEN.
M2 OR T2,T4
M1 OR T1,T3
CR4
47Ω-1/2W
220Ω-1/2W
2KΩ-1/4W.
2.2KΩ-1/2W
10UF 3V.
2K.Ω-1/4W.
680Ω-1/2W
TO LOAD
705HA-21-4/1A
NOTE:
1 - WIRES TO LOAD SENSOR AMPLIFIER No20 OTHER WIRES No20 OR LARGER.
2 - OPERATE WITH NEGATIVE GROUND ONLY
K ADDED NOTE 2 9-3-66
J WIRE CONN. CHANGED 5-25-66
G WAS NO. 304A5 2-11-66
F MOVED "T" & WAS No315A233 JV 2-7-66
E ADDED TERMINAL G 11-1-65
C ADD R5 350-1132 6-8-65
B WAS 332A707 JV 6-3-65
Onan DIVISION OF STUDEBAKER CORPORATION
4-16-65 CKH JV. WJB
AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
617 C 80
MODEL 705HA-21-4/1A
120 VOLT 1PH
2 WIRE 50-60~
32 V. CRANKING

617 C87

PICTORIAL

SCHEMATIC

705 HA-21-4/10A



705HA-4/10A

617 C87

NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº 20 OTHER WIRES Nº 20 OR LARGER.

(G) 2- OPERATE WITH NEGATIVE GROUND ONLY

G	ADDED NOTE 2	JV	9-13-66
F	WIRE CONN. CORRECTED	JV	6-27-66
E	WAS 309A262	JV	4-28-66
D	WAS 307A645	JV	4-28-66
C	ADDED CR6	JV	4-[illegible]-66
B	WAS NO. 304A5	JV	2-11-66
A	MOVED "B" WAS NO. 315A233	JV	2-7-66
LET.	REVISION	CK'D	DATE

Onan DIVISION OF STUDEBAKER CORPORATION

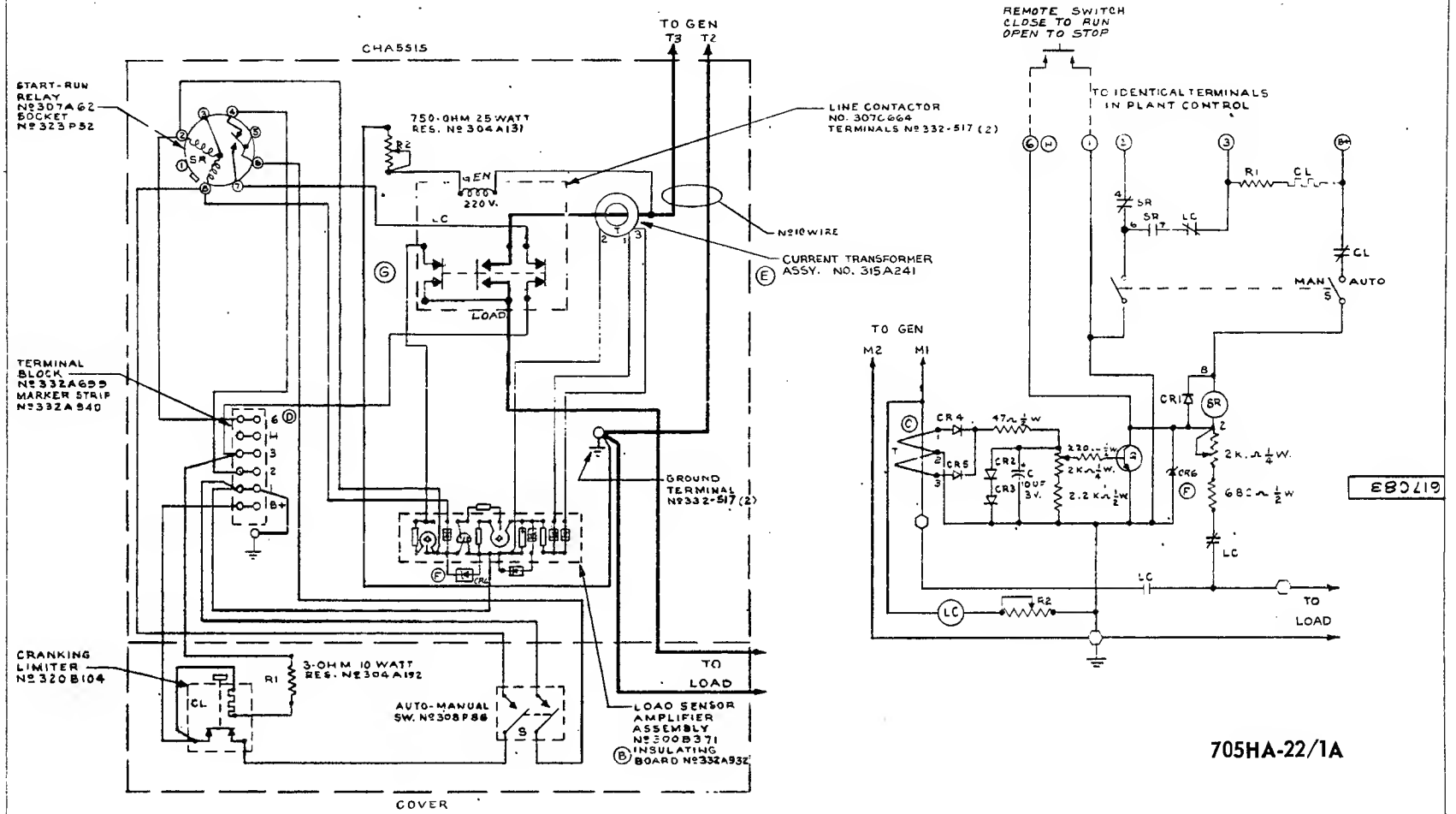
MODEL	DATE	BY	CK'D
705HA-21-4/10A	11-20-65	TB	JV WB
120 VOLT 1PH. 2 WIRE 50-60~	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
32 V. CRANKING	DWG NO: 617 C87		

617C83

PICTORIAL

SCHEMATIC

705HA-22/1A



617C83

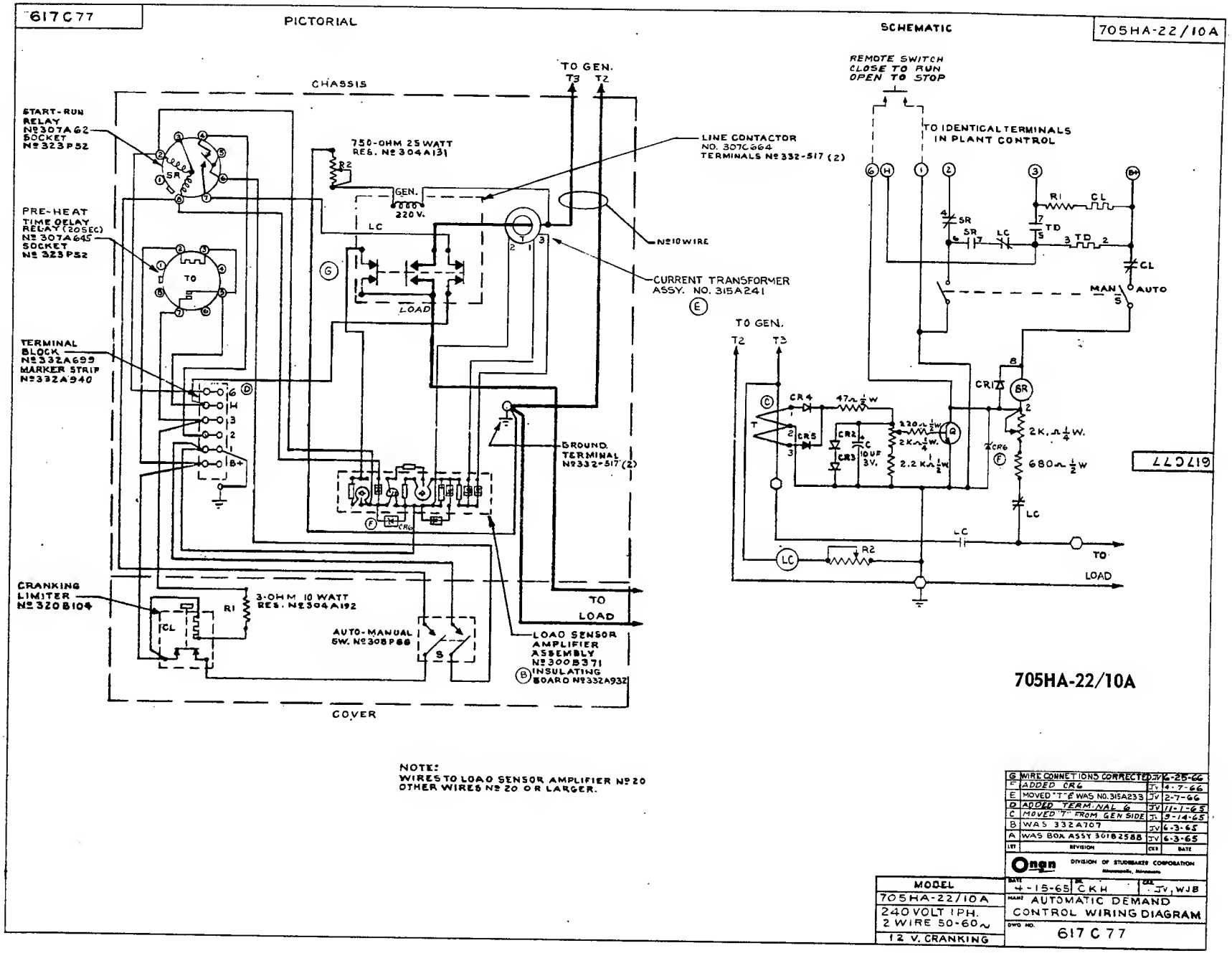
705HA-22/1A

NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº20 OR LARGER

G	WIRE CONN. CORRECTED	JV	6-25-66
F	ADDED CR6	JV	4-7-66
E	MOVED T TO WAS NO 315A233	JV	2-7-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED T FROM SEN SIDE	JV	9-14-65
B	WAS 332A707	—	6-4-65
A	WAS BOX ASSY. 301B2588	JV	6-4-65
LTR	REVISION	CKD	DATE

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL	DATE	BY	CKD
705HA-22/1A	5-5-65	W.J.B	JV, WJB
240 VOLT 1PH. 2 WIRE 50-60~	NAME	AUTOMATIC DEMAND CONTROL WIRING DIAGRAM	
12 V. CRANKING	DWG NO	617C83	



NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER.

LET	REVISION	CK'D	DATE
G	WIRE CONNECTIONS CORRECTED	JV	6-25-66
F	ADDED CR6	JV	4-7-66
E	MOVED "T" (WAS NO. 315A233)	JV	2-7-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED "T" FROM GEN SIDE	JV	9-14-65
B	WAS 332A707	JV	6-3-65
A	WAS BOX ASSY 307B2588	JV	6-3-65

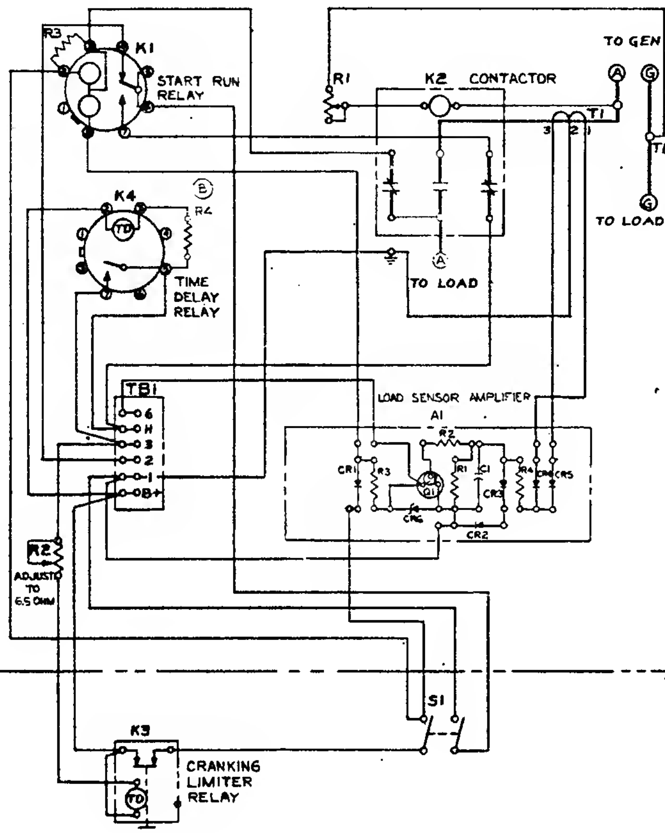
Onan DIVISION OF STUDEBAKER CORPORATION Minneapolis, Minnesota

MODEL	DATE	BY	CK'D
705HA-22/10A	4-15-65	CKH	JV, WJB
240 VOLT 1PH. 2 WIRE 50-60~	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
12 V. CRANKING	DWG NO. 617 C 77		

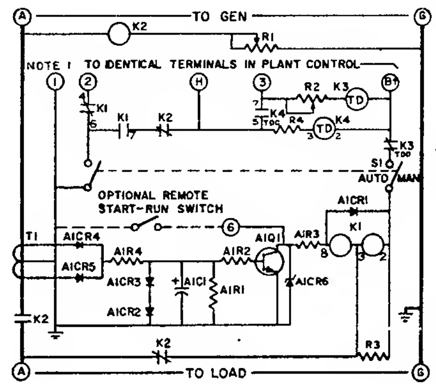
617C109

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B482	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
(E)	323P380	1	SOCKET
K2	307C664	1	CONTACTOR
	332-517	2	TERMINAL
(C)	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
(A) K4	307A645	1	RELAY-TIME DELAY, STARTING
(F)	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
R3	304A47	1	RESISTOR, 15-OHM, 25 W
(B) R4	352-114	1	RESISTOR, 62-OHM, 2W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
(G)	334A1890	2.5 FT	WIRE-FLEXIBLE NO. 20 AWG
(H)	334A1842	2 FT	WIRE-FLEXIBLE NO. 16 AWG

601D419

705HA-22-3/10A

NOTES:

(D) 1. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

2. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

LTR	REVISION
H	ADDED WIRE NO. 334A 842
G	334-890
F	WAS 323P80 SOCKET
E	WAS 323P52 SOCKET
D	ADDED NOTE 1 & 2
C	ADDED LABEL 98A2045
B	ADDED 352-
A	WAS 307-679

ONAN — DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 705HA-22-3/10A

24 VOLT CRANKING

240V, 1PH., 2W., 50/60CY.

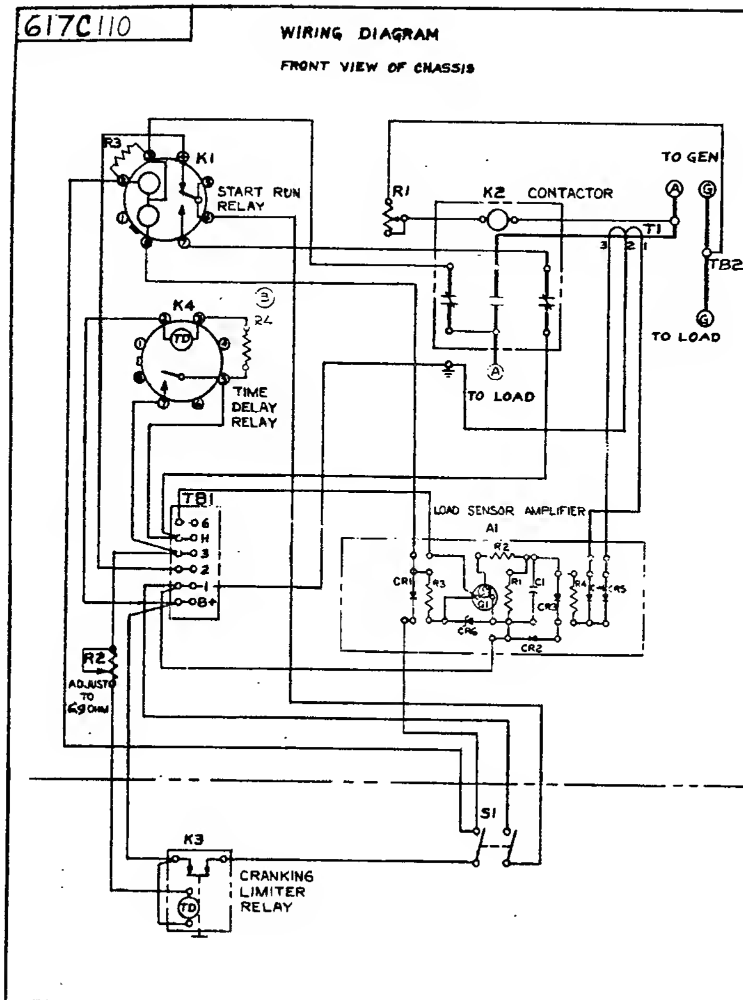
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG. NO. 617C109

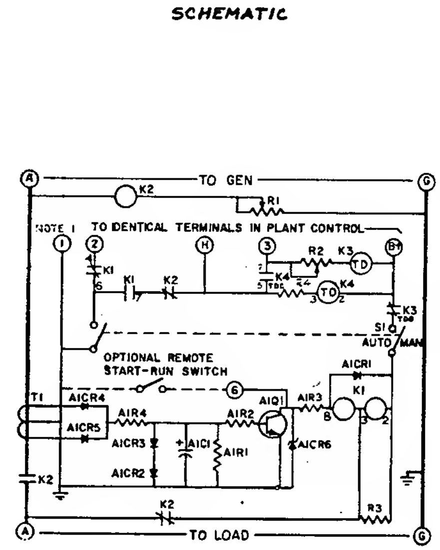
617C110

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

2. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

PARTS LIST

REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B482	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C664	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A359	1	RELAY-TIME DELAY, START (5S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
R3	304A47	1	RESISTOR, 15-OHM, 25 W
R4	352-414	1	RESISTOR, 62-OHM, 2W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
	334A1890	25 FT	WIRE-FLEXIBLE NO. 20 AWG
	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 AWG

617C110

705HA-22-3/12A

LTR.	REVISION		CHK	DATE
H	ADDED WIRE NO. 334A1842			3-4-69
G	" 334A1890			3-4-69
F	WAS 323P52 SOCKET			1-9-67
E	" "			1-9-67
D	ADDED NOTES 1 & 2			1-1-67
C	ADDED LABEL 98A2045			1-1-67
B	ADDED 352-414			4-2-67
A	WAS 307A97			4-2-67

Onan — Division of Studebaker Corporation

MODEL NO. 705HA-22-3/12A

24 VOLT CRANKING

V., 1 PH., 2 W., 50/60 CY.

DATE 1-5-67 | BY CDR | CHK W.B.

SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

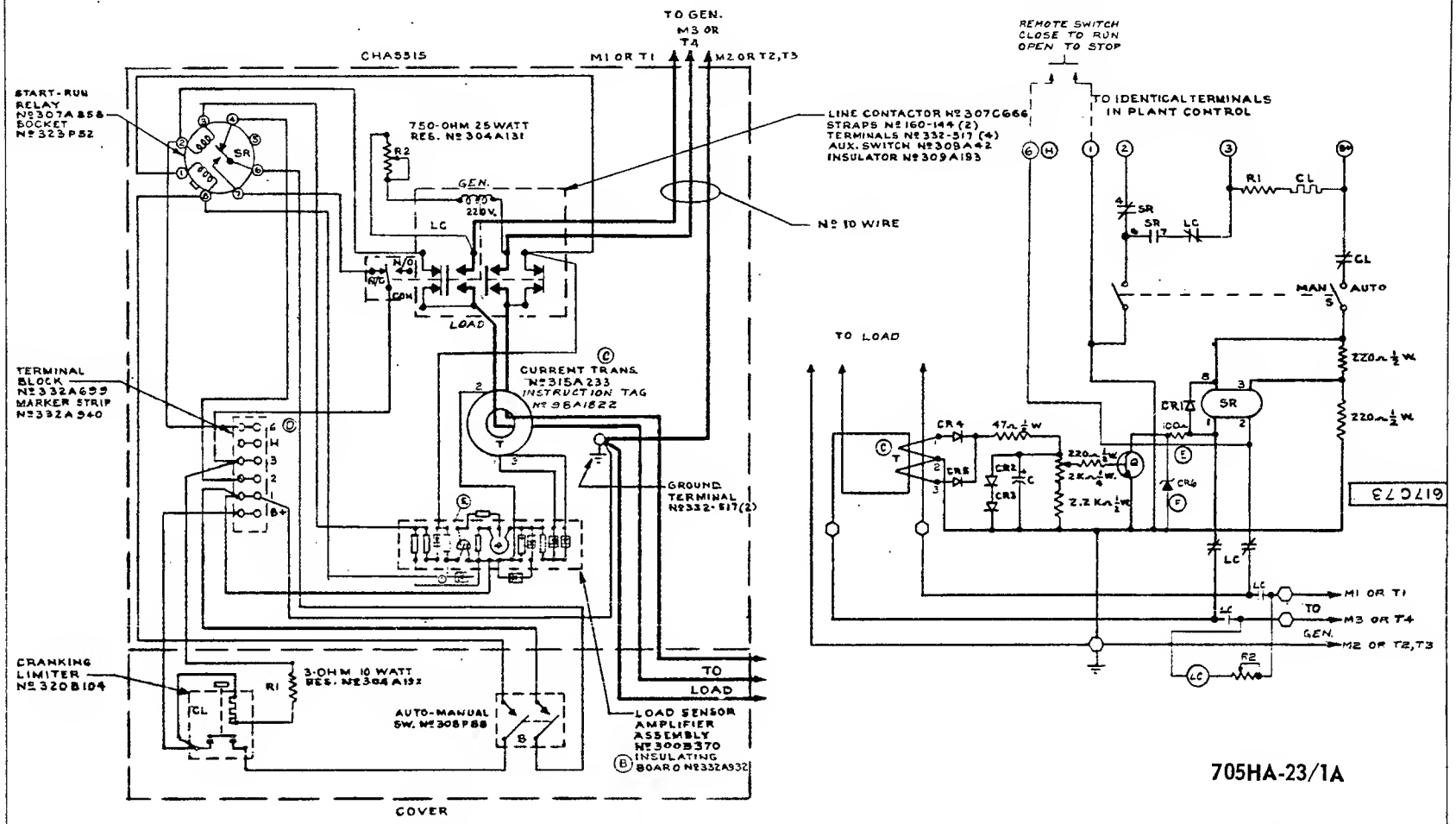
DWG NO. 617C110

617C73

PICTORIAL

SCHEMATIC

7.5HA-23/1A



705HA-23/1A

NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº20 OTHER WIRES Nº 20 OR LARGER.

(G) 2- OPERATE WITH NEGATIVE GROUND ONLY

LET	REVISION	CKD	DATE
G	ADDED NOTE 2	JV	9-3-66
F	ADDED CR6	JV	4-13-66
E	ADDED DIODES	JV	4-13-66
D	ADDED TERMINAL 6	JV	1-11-65
C	MOVED "T" FROM GEN SIDE	JV	9-14-65
B	WAS 332A787	JV	6-21-65
A	WAS BOX ASSY. 301B288	JV	5-5-65

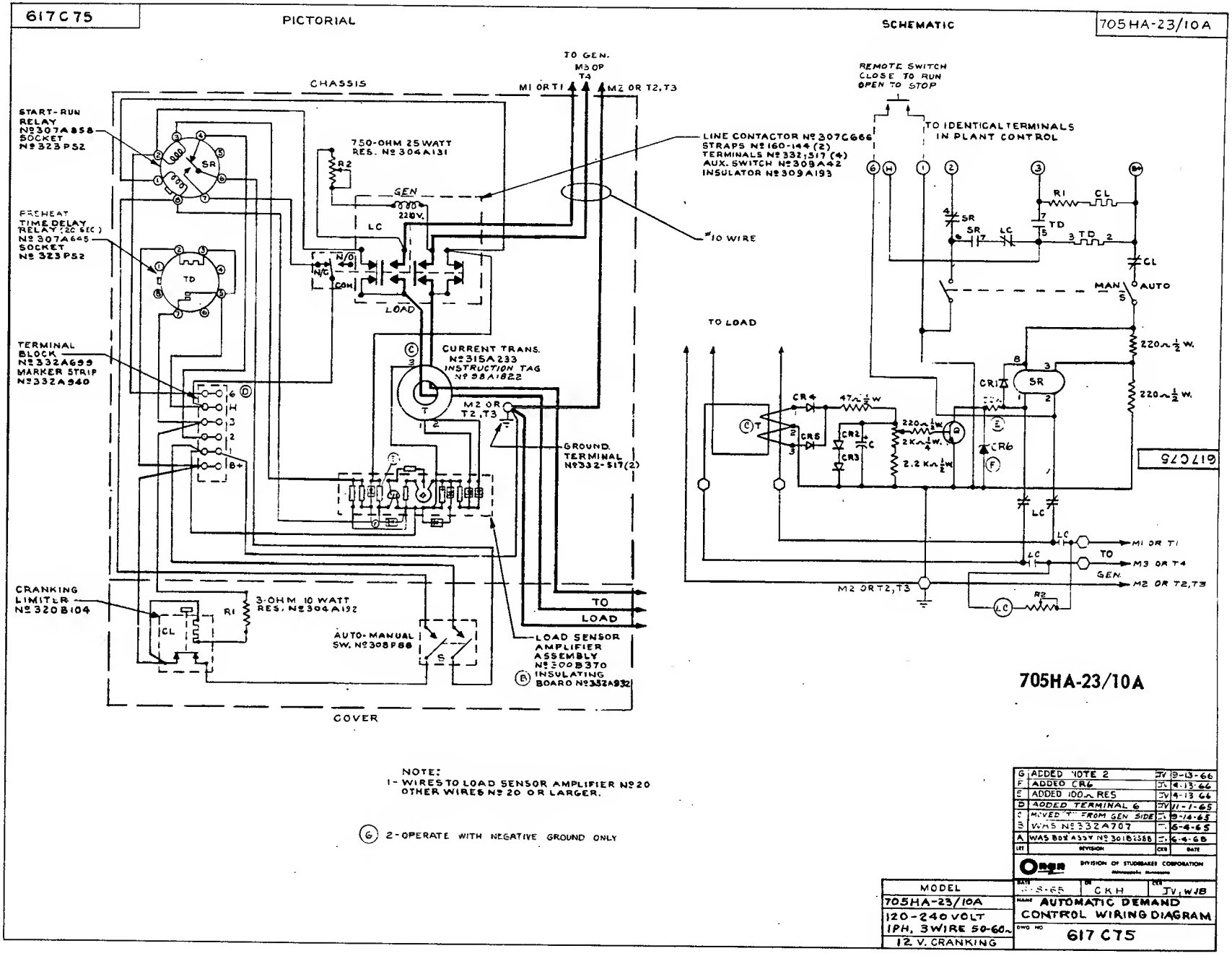
Onan — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minnesota

DATE	BY	CK'D
4-9-65	CKH	JV, WJB

MODEL
7.5 HA-23/1A
120-240 VOLT
1 PH. 3 WIRE 50-60~
12 V. CRANKING

NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM

DWG. NO: 617C73



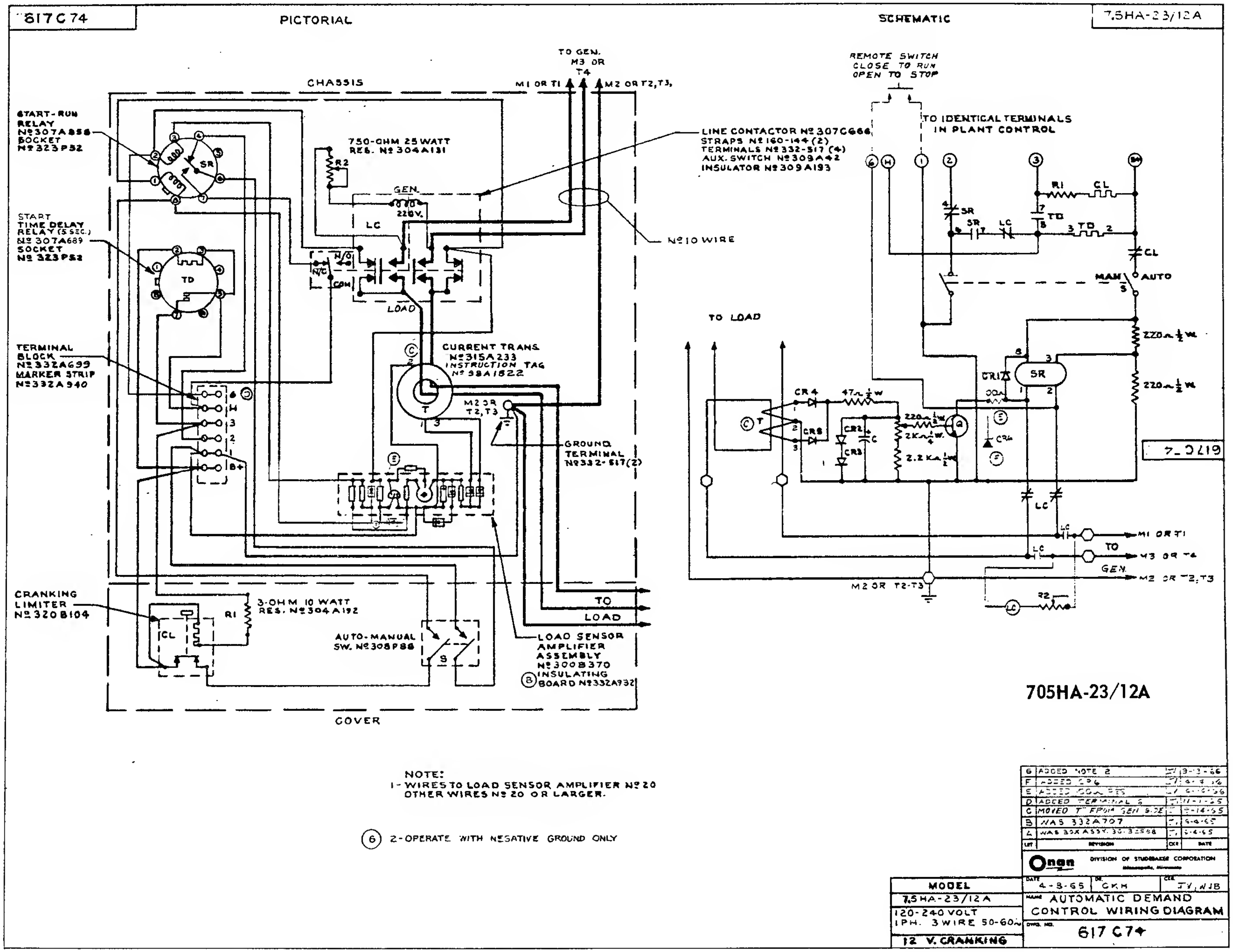
NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº20 OTHER WIRES Nº 20 OR LARGER.

(G) 2-OPERATE WITH NEGATIVE GROUND ONLY

LET	REVISION	CKD	DATE
G	ADDED NOTE 2	JV	9-13-66
F	ADDED CR6	JV	4-13-66
E	ADDED 100Ω RES	JV	4-13-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED T1 FROM GEN SIDE	JV	9-14-65
B	WAS Nº332A707	—	6-6-65
A	WAS BOX ASSY Nº301B2588	JV	6-6-65

DIVISION OF STUDEBAKER CORPORATION

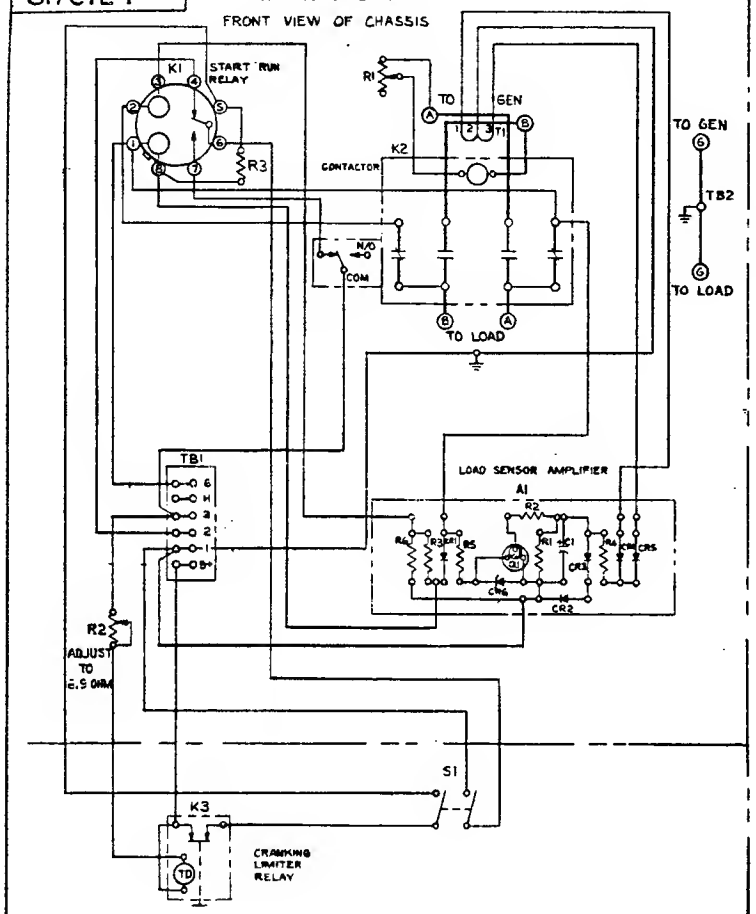
MODEL	DATE	BY	CKD
705HA-23/10A	3-5-65	CKH	JV, WJB
120-240 VOLT 1PH, 3WIRE 50-60~ 12 V. CRANKING	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
	DWG NO: 617C75		


617C74
PICTORIAL
SCHEMATIC
7.5HA-23/12A
CHASSIS
TO GEN.
M3 OR
T4
M1 OR T1
M2 OR T2,T3,
START-RUN
RELAY
Nº307A856
SOCKET
Nº323P52
START
TIME DELAY
RELAY (5 SEC.)
Nº 307A689
SOCKET
Nº 323P52
TERMINAL
BLOCK
Nº332A699
MARKER STRIP
Nº332A940
CRANKING
LIMITER
Nº320B104
750-OHM 25 WATT
RES. Nº 304A131
GEN.
220V.
LC
LOAD
CURRENT TRANS.
Nº315A233
INSTRUCTION TAG
Nº 98A1522
M2 OR
T2,T3
GROUND
TERMINAL
Nº332-517(2)
3-OHM 10 WATT
RES. Nº304A192
AUTO-MANUAL
SW. Nº308P88
LOAD SENSOR
AMPLIFIER
ASSEMBLY
Nº300B370
INSULATING
BOARD Nº332A932
TO
LOAD
COVER
LINE CONTACTOR Nº307G666
STRAPS Nº160-144(2)
TERMINALS Nº332-517(4)
AUX. SWITCH Nº309A42
INSULATOR Nº309A193
Nº10 WIRE
REMOTE SWITCH
CLOSE TO RUN
OPEN TO STOP
TO IDENTICAL TERMINALS
IN PLANT CONTROL
MAN
AUTO
TO LOAD
220Ω ½ W.
SR
CR4
47Ω ½ W
2.2 KΩ ½ W
M1 OR T1
TO
M3 OR T4
GEN.
M2 OR T2,T3
M2 OR T2-T3
7-2619
705HA-23/12A
NOTE:
1 - WIRES TO LOAD SENSOR AMPLIFIER Nº 20
OTHER WIRES Nº 20 OR LARGER.
(6) 2-OPERATE WITH NEGATIVE GROUND ONLY
Onan DIVISION OF STUDEBAKER CORPORATION
MODEL
7.5HA-23/12A
120-240 VOLT
1PH. 3 WIRE 50-60~
12 V. CRANKING
4-8-65
CKM
AUTOMATIC DEMAND
CONTROL WIRING DIAGRAM
617C74

617C124

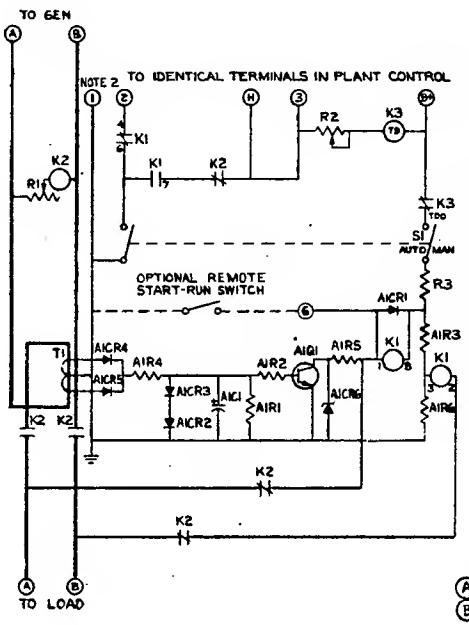
WIRING DIAGRAM

FRONT VIEW OF CHASSIS



REAR VIEW OF DOOR

SCHEMATIC



3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

PARTS LIST

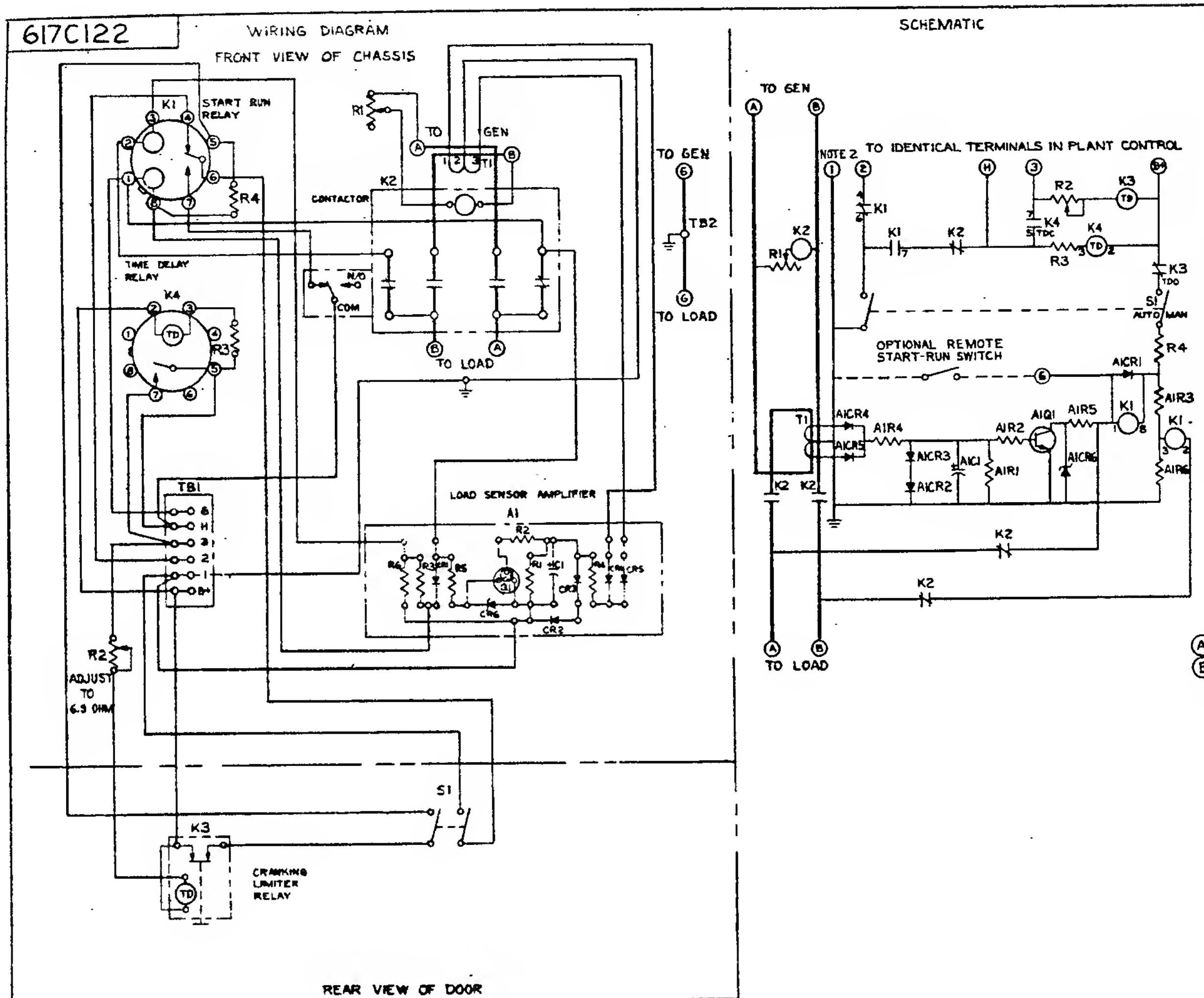
REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR, 750 OHM, 25 W.
R2	304A222	1	RESISTOR, 15 OHM, 50 W.
R3	350-984	1	RESISTOR, 750 OHM, 2 W.
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL - GROUND
	30102573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	30182586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C124
A	334A1890	25 FT	WIRE - FLEXIBLE NO. 20 AWG
B	334A1842	2 FT	WIRE - FLEXIBLE NO. 16 AWG

705HA-23-3/1A

LET.	REVISION	CAE	DATE
B	ADDED WIRE NO. 334A1842		5-19-69
A	334A1890		5-19-69

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 705HA-23-3/1A	DATE 1-25-68	DR CDR	CK
24 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM		
120/240 V., 1 PH, 3 WIRE, 50/60 CY.	AUTOMATIC DEMAND CONTROL		
	DWG NO 617C124		



PARTS LIST			
REF. DES.	PART NO	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A645	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, 15 OHM, 50W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-577	2	TERMINAL - GROUND
R3	352-114	1	RESISTOR, 62 OHM, 2 W
R4	350-984	1	RESISTOR, 750 OHM, 2 W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C122
(A)	334A1890	2.5 FT	WIRE - FLEXIBLE NO. 20 AWG
(B)	334A1842	2 FT	WIRE - FLEXIBLE NO. 16 AWG

705HA-23-3/10A

C			
B	ADDED WIRE ... 334A1842		3-17-65
A	" " 334A1890		
LTR	REVISION	CKD	DATE

Onan — DIVISION OF STUDEBAKER CORPORATION

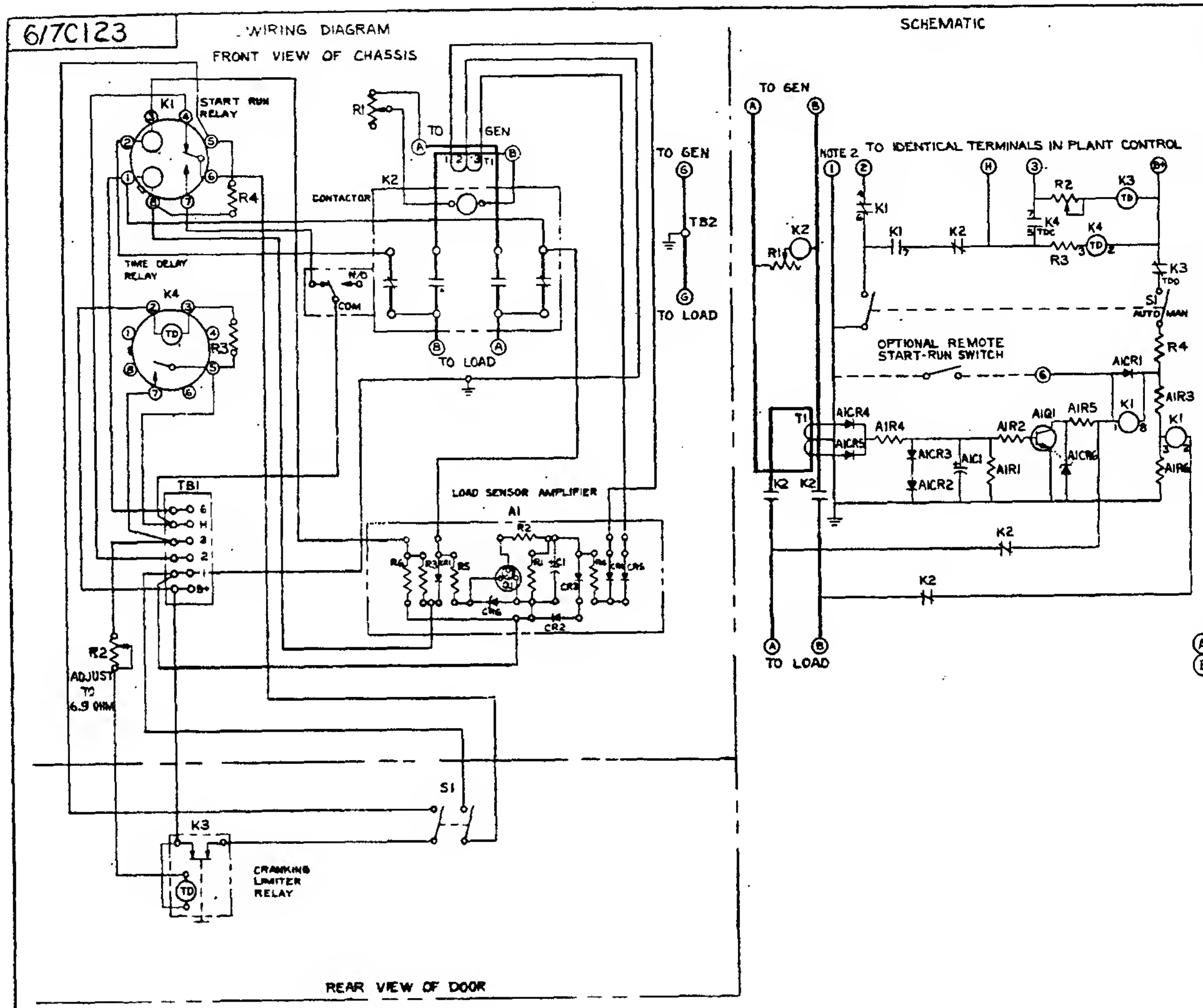
MODEL NO. 705HA-23-3/10A	DATE 1-25-67 · COR
24 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
120/240 V, 1 PH, 3 WIRE, 50/60 CY.	DWG NO 617C122

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

617C123



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W.
R2	304A222	1	RESISTOR, 15 OHM, 50W.
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL - GROUND
R3	352-.14	1	RESISTOR, 62 OHM, 2 W.
R4	350-984	1	RESISTOR, 750 OHM, 2 W.
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
Ⓐ	334A1890	25 FT	WIRE - FLEXIBLE NO. 20 AWG
Ⓑ	334A1842	12 FT	WIRE - FLEXIBLE NO. 16 AWG

617C123

705HA-23-3/12A

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

B	ADDED ...		5-17-6?
A	... 334A 890		3-7-6?
LTR.	REVISION	CKD	DATE

Onan — DIVISION OF STUDEBAKER CORPORATION

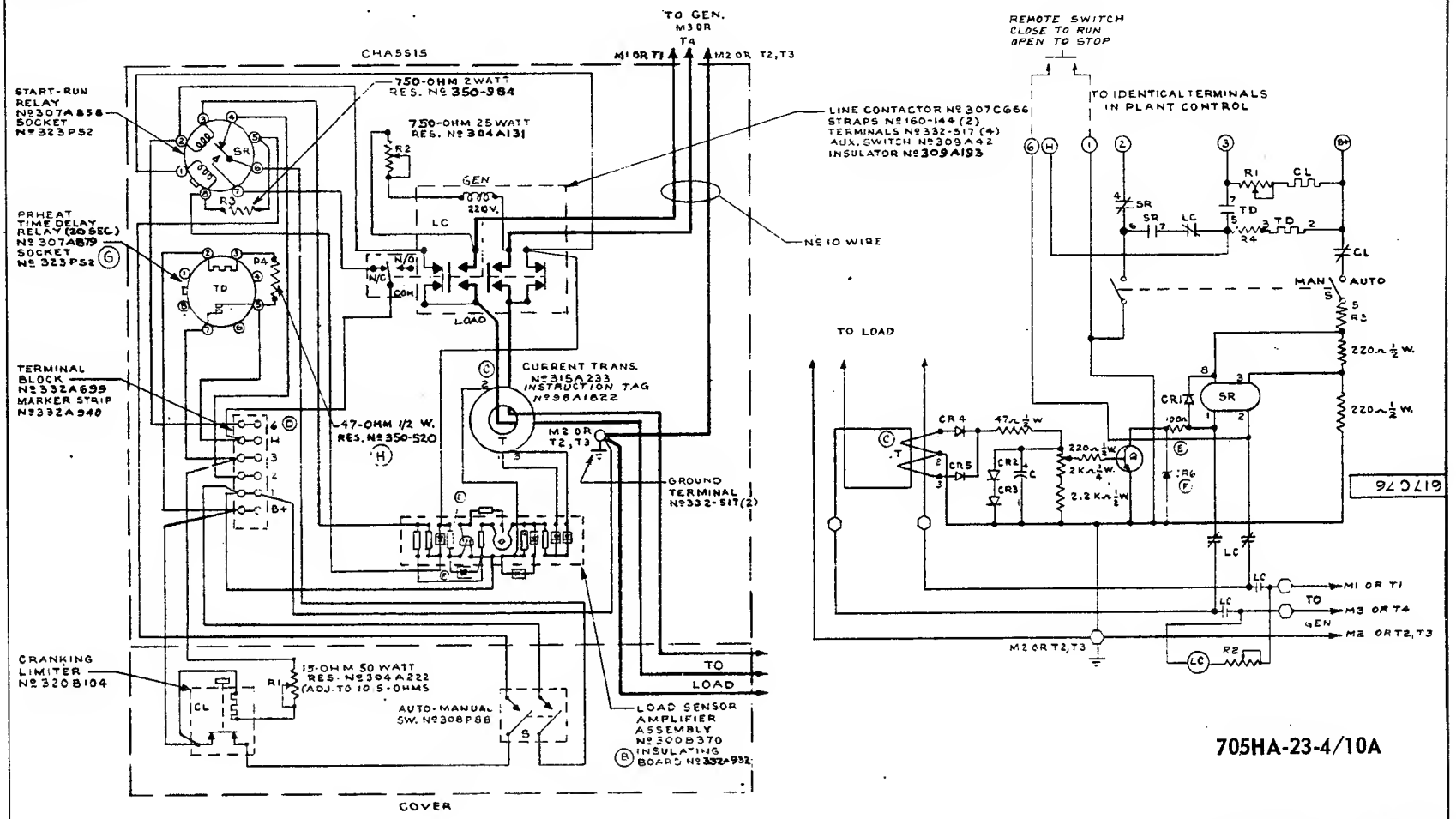
MODEL NO. 705HA-23-3/12A	DATE 1-25-67 · DR CDR
24 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
120/240 V., 1PH., 3 WIRE, 50/60 CY.	DWG. NO. 617C123

617C76

PICTORIAL

SCHEMATIC

705HA-23-4/10A



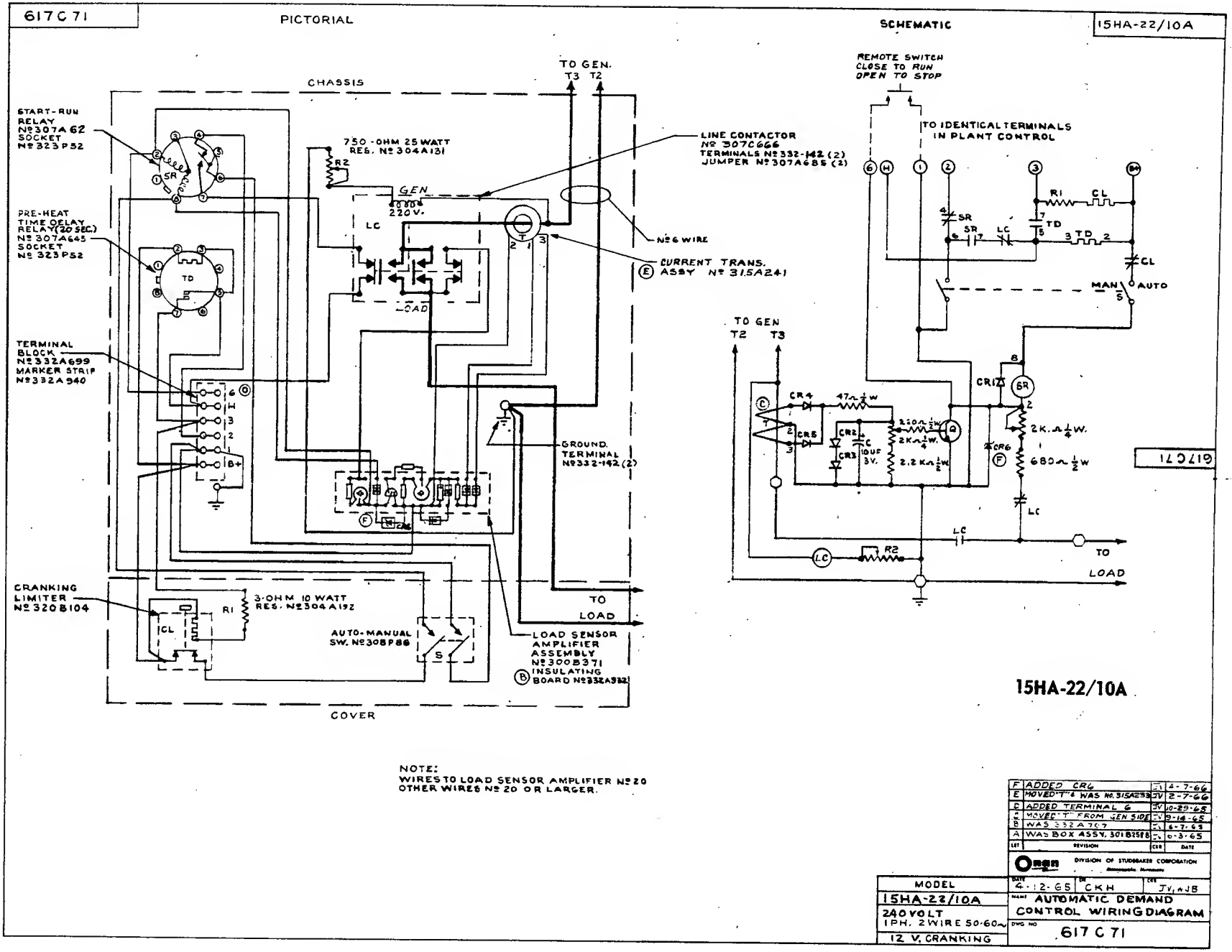
NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº 20
OTHER WIRES Nº 20 OR LARGER

(J) 2- OPERATE WITH NEGATIVE GROUND ONLY

LET	REVISION	CKD	DATE
J	ADDED NOTE 2.	JV	9-13-66
H	WAS 304A262	JV	4-28-66
G	WAS 307A645	JV	4-28-66
F	ADDED CR6	JV	4-11-66
E	ADDED 100Ω RES	JV	4-11-66
D	ADDED TERMINAL 6	JV	11-1-65
C	MOVED "-" FROM GEN. SIDE	JV	9-14-65
B	WAS 332A707	JV	6-3-65
A	WAS BOX ASSY. 301B588	JV	6-3-65

Onan — DIVISION OF STUDEBAKER CORPORATION

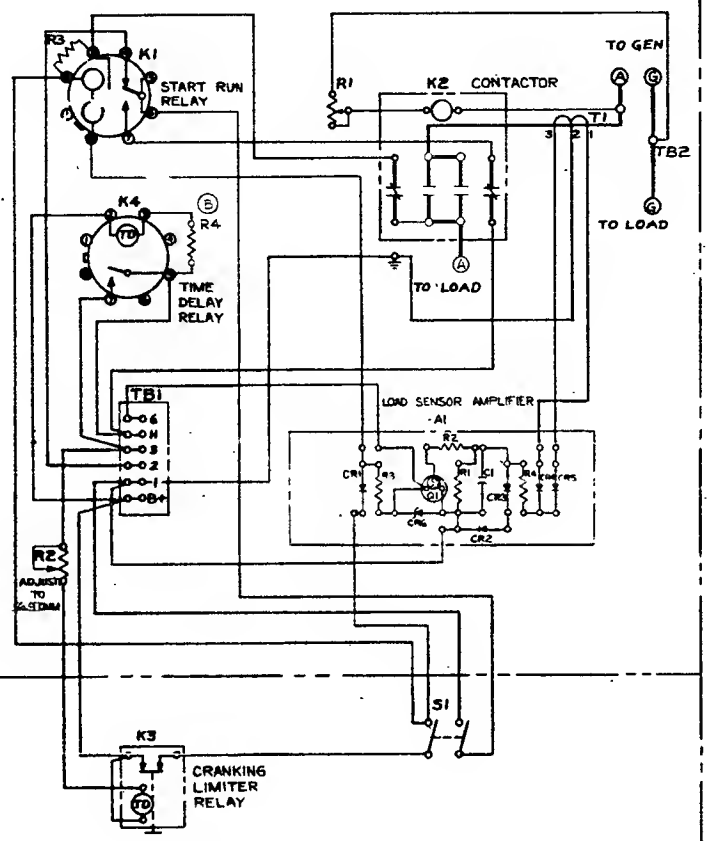
MODEL	DATE	DR	CKD
705HA-23-4/10A	4-9-65	CKH	JV WJB
120-240 VOLT 1 PH. 3 WIRE 50-60~	NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM		
32 V. CRANKING	DWG NO: 617C76		


617 C 71
PICTORIAL
SCHEMATIC
15HA-22/10A
CHASSIS
TO GEN.
T3 T2
START-RUN RELAY Nº307A62 SOCKET Nº323P52
PRE-HEAT TIME DELAY RELAY (20 SEC.) Nº307A645 SOCKET Nº323P52
TERMINAL BLOCK Nº332A699 MARKER STRIP Nº332A940
CRANKING LIMITER Nº320B104
750-OHM 25 WATT RES. Nº304A131
R2
GEN
LC
LOAD
LINE CONTACTOR Nº 307C666 TERMINALS Nº332-142 (2) JUMPER Nº307A685 (2)
Nº6 WIRE
(E) CURRENT TRANS. ASSY Nº 315A241
GROUND TERMINAL Nº332-142 (2)
3-OHM 10 WATT RES. Nº304A192
R1
CL
AUTO-MANUAL SW. Nº308P86
LOAD SENSOR AMPLIFIER ASSEMBLY Nº300B371 INSULATING BOARD Nº332A332
(B)
TO LOAD
COVER
REMOTE SWITCH CLOSE TO RUN OPEN TO STOP
TO IDENTICAL TERMINALS IN PLANT CONTROL
TD
SR
MAN
AUTO
TO GEN
T2 T3
CR1
CR2
CR3
CR4
CR5
CR6
47Ω 1/4 W
10UF 3V.
2K Ω 1/4 W.
2.2 KΩ 1/2W
680Ω 1/2 W
TO LOAD
617C71
15HA-22/10A
NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº 20 OR LARGER.
F ADDED CR6 JV 4-7-66
E MOVED "T" & WAS Nº 315A233 JV 2-7-66
D ADDED TERMINAL 6 JV 10-29-65
C MOVED "T" FROM GEN SIDE JV 9-14-65
B WAS 332A707 JV 6-7-65
A WAS BOX ASSY. 301B258B JV 6-3-65
LET REVISION CKD DATE
Onan DIVISION OF STUDEBAKER CORPORATION
MODEL
15HA-22/10A
240 VOLT
1PH. 2WIRE 50-60~
12 V. CRANKING
DATE 4-12-65 DR CKH CKD JV, MJB
NAME AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
DWG NO 617 C 71

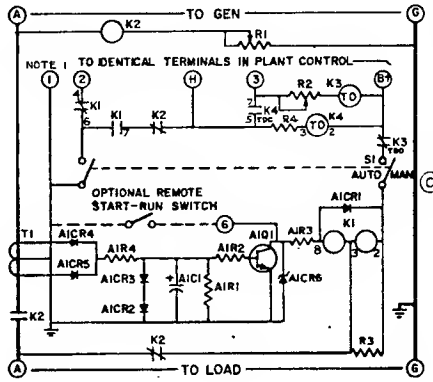
617C106

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.
2. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

PARTS LIST

REF.DES.	PART NO.	QTY	DESCRIPTION
A1	300B482	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
(E)	323P380	1	SOCKET
* K2	307C666	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
(A) K4	307A645	1	RELAY-TIME DELAY, PREHEAT 2-5
(F) --	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY- CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A47	1	RESISTOR, 15-OHM, 25 W
(B) R4	352-114	1	RESISTOR, 62-OHM, 2W
(C) *	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1B15	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
(G)	334A1890	2.5FT	WIRE-FLEXIBLE NO. 20 AWG
(H)	334A1842	12FT	WIRE-FLEXIBLE NO. 16 AWG
			901D219

15HA-22-3/10A

LTR	REVISION	BY	DATE
H	ADDED WIRE NO 334A1842	WJB	3-14-69
G	" " " 334A1890	WJB	3-14-69
F	WAS 323P52 SOCKET	WJB	11-9-67
E	" " "	WJB	11-9-67
D	ADDED NOTES 1 & 2	WJB	11-1-67
C	ADDED LABEL PART	WJB	11-1-67
B	ADDED 352-4	WJB	4-20-67
A	WAS 307A879	WJB	4-20-67

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO.	DATE	BY	CHK
15HA-22-3/10A	12-30-66	CDR	WJB

24 VOLT CRANKING

240 V, 1PH, 2W, 60/60EY

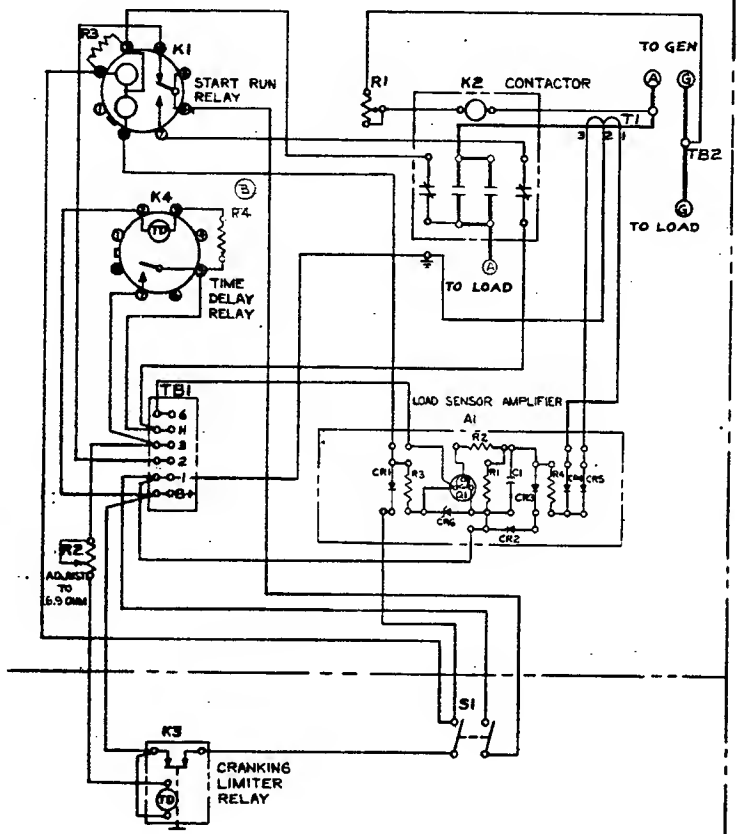
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG. NO. 617C106

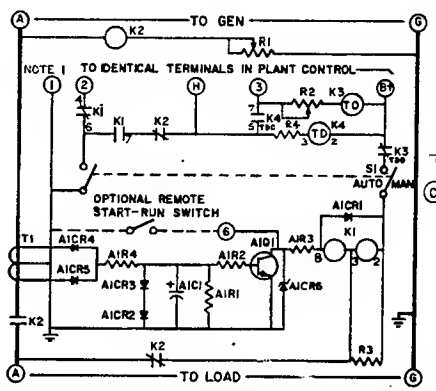
617C107

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.
2. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

PARTS LIST

REF DES	PART NO.	QTY	DESCRIPTION
A1	300B482	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A689	1	RELAY-TIME DELAY, STARTING (ES)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A66	1	RESISTOR, 10-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A47	1	RESISTOR, 15-OHM, 25 W
R4	352-114	1	RESISTOR, 62-OHM, 2W
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
	334A1890	25 FT	WIRE-FLEXIBLE NO. 20 A.W.G.
	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 A.W.G.

L012L12

15HA-22-3/12A

H	ADDED WIRE I.D. 334A1842	JV	WJB	3-14-69
G	" " 334A 890	JV	WJB	3-4-69
F	WAS 323P52 SOCKET	JV	WJB	1-9-67
E	" " "	JV	WJB	1-9-67
D	ADDED NOTES 1 & 2	JV	WJB	11-1-67
C	ADDED LABEL 98A2045	JV	WJB	11-1-67
B	ADDED [illegible]	JV	WJB	11-1-67
A	WAS [illegible]	JV	WJB	11-1-67

ONAN — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minnesota

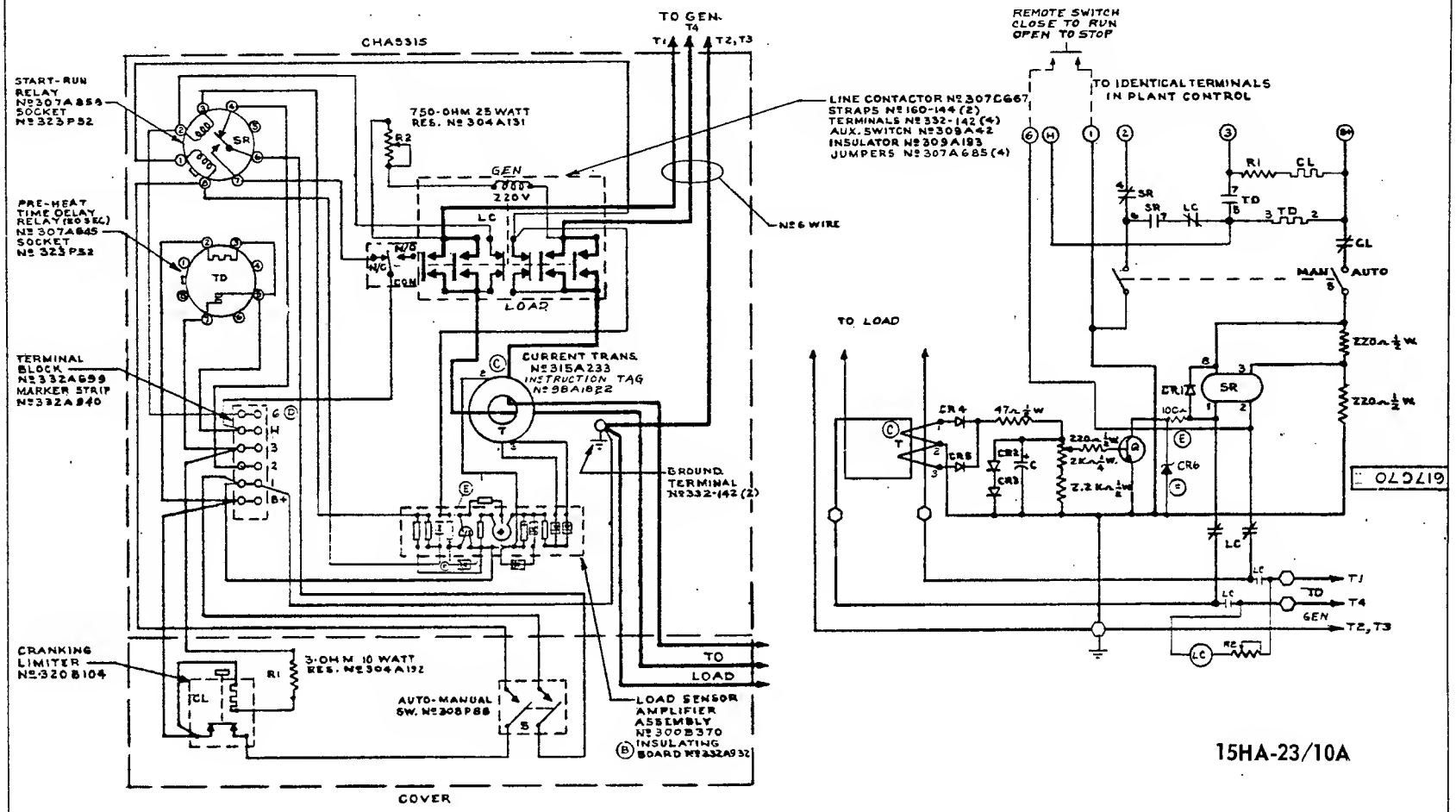
MODEL NO. 15HA-22-3/12A	DR. JOR	DATE 11-1-67 WJB
24 VOLT CRANKING	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL	
240 V., 1 PH., 2W., 50/60 CY.	DWG. NO. 617C107	

617C70

PICTORIAL

SCHEMATIC

15.0HA-23/10A



15HA-23/10A

NOTE:
1- WIRES TO LOAD SENSOR AMPLIFIER Nº20 OTHER WIRES Nº 20 OR LARGER.

(6) 2- OPERATE WITH NEGATIVE GROUND ONLY

LET.	REVISION	BY	DATE
G	ADDED NOTE 2	JV	9-12-66
F	ADDED CR6	JV	6-13-66
E	ADDED 100Ω RES	JV	6-13-66
D	ADDED TERM 1A, 2	JV	10-29-65
C	MOVED "T" FROM GEN SIDE	JV	5-14-65
B	WAS Nº332A707	JV	6-3-65
A	WAS BOX ASSY. 300B2568	JV	6-3-65

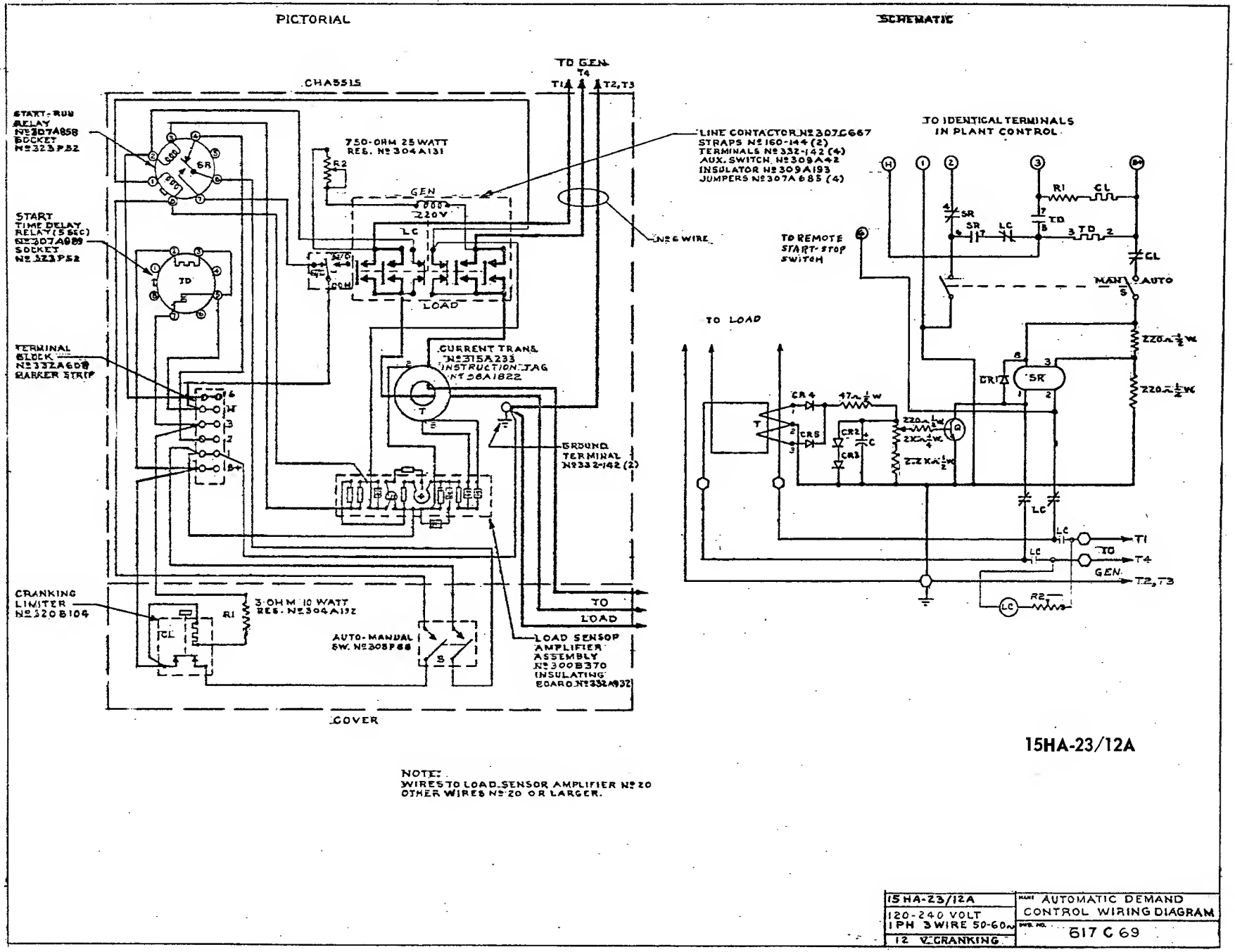
Onan DIVISION OF STUDEBAKER CORPORATION

DATE	BY	CKD
4-12-65	CKH	JV, WWB

NAME: AUTOMATIC DEMAND CONTROL WIRING DIAGRAM

DWG. NO. 617C70

MODEL
15.0HA-23/10A
120-240 VOLT 1PH. 3WIRE 50-60~
12 V. CRANKING



NOTE:
WIRES TO LOAD SENSOR AMPLIFIER Nº 20
OTHER WIRES Nº 20 OR LARGER.

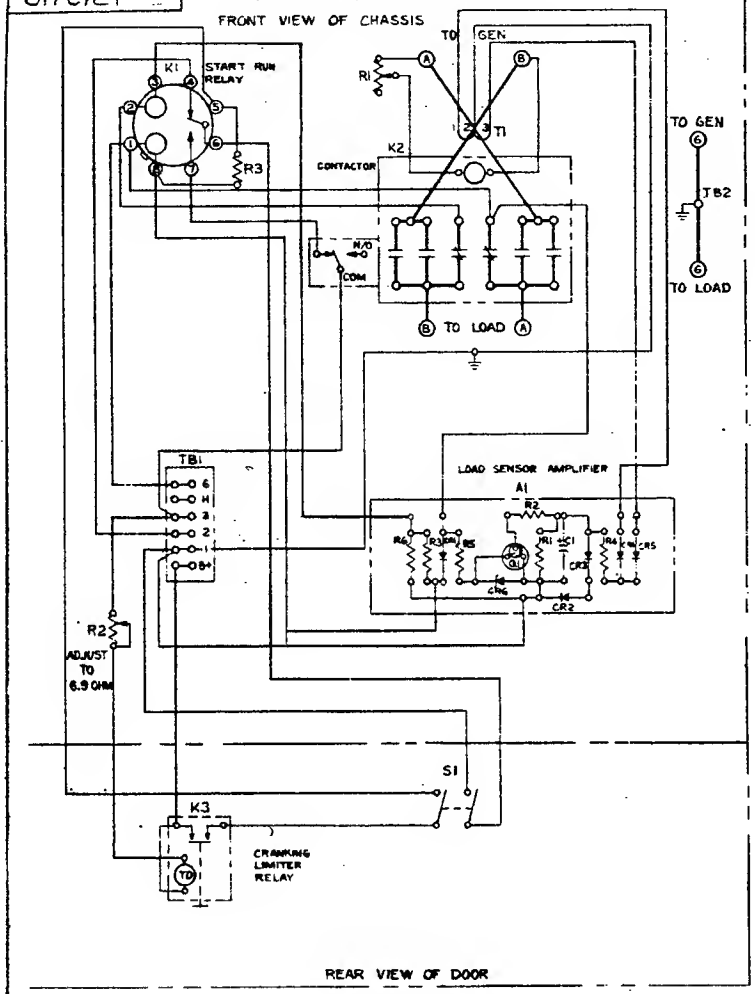
15HA-23/12A

15HA-23/12A	NAME AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
120-240 VOLT 1PH 3WIRE 50-60~	DWG. NO. 617C69
12 V. CRANKING	

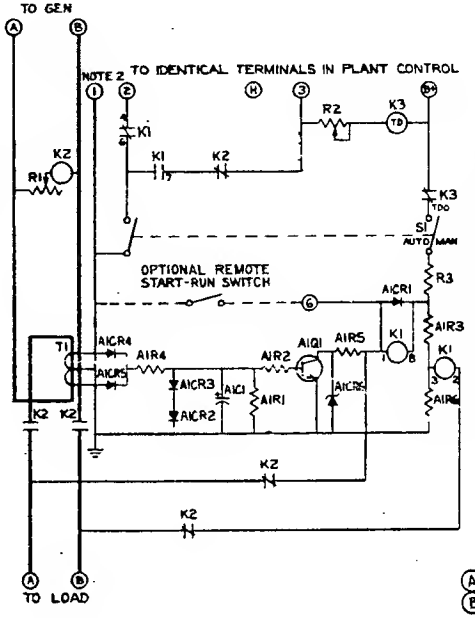
617C121

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307AB58	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (B9B-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR, 750 OHM, 25 W
R2	304A222	1	RESISTOR, 15 OHM, 50W
R3	350-984	1	RESISTOR, 750 OHM, 2 W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
	301D2573	1	CONTROL BOX
	98A1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			1213L19
A	334A1890	2.5 FT	WIRE - FLEXIBLE NO. 20 AWG
B	334A1842	12 FT	WIRE - FLEXIBLE NO. 16 AWG

15HA-23-3/1A

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: - OPERATE WITH NEGATIVE GROUND ONLY

LET	DESCRIPTION	ECO	DATE
B	ADDED WIRE NO. 334A1842		3-17-69
A	334A890		5-17-68

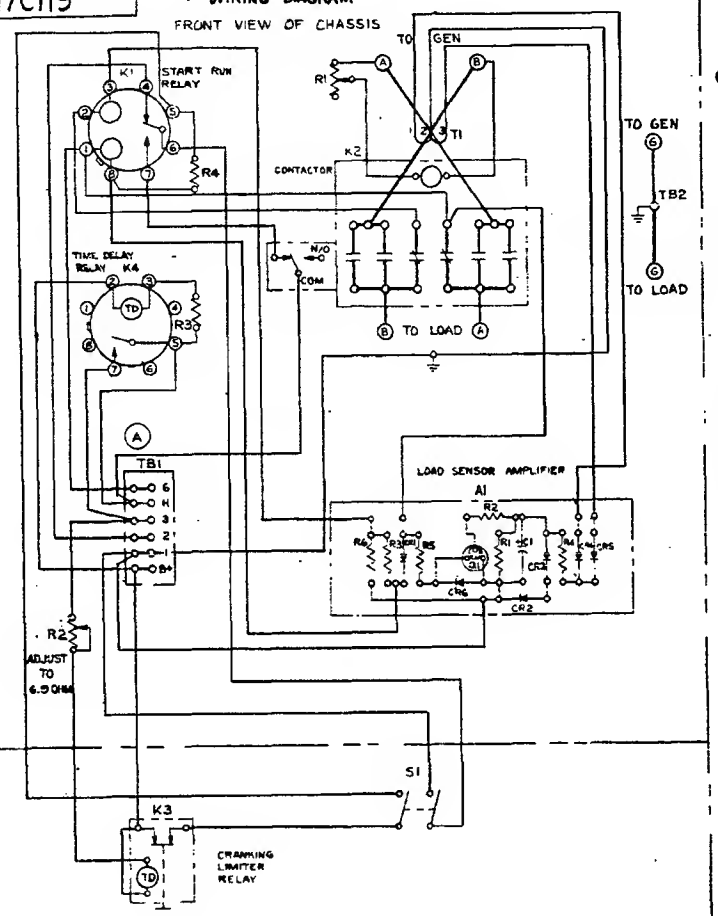
Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO.	15HA-23-3/1A	DWN 1-24-68	BY CDR
	24 VOLT CRANKING	NAME	SCHEMATIC & WIRING DIAGRAM
	120/240 V., 1 PH., 3 WIRE, 50/60 CY.		AUTOMATIC DEMAND CONTROL
		DWG NO	617C121

617C119

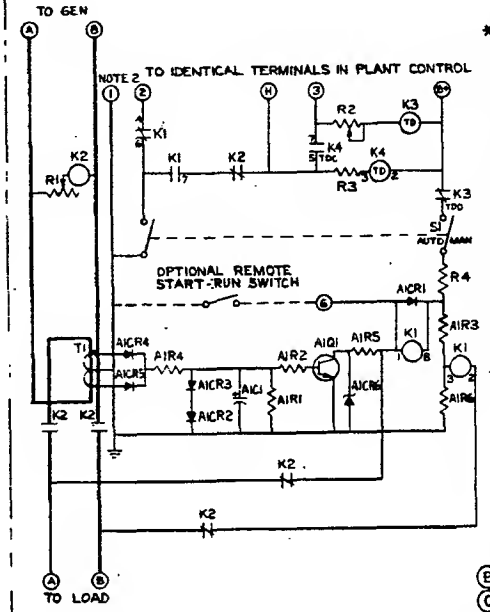
WIRING DIAGRAM

FRONT VIEW OF CHASSIS



REAR VIEW OF DOOR

SCHEMATIC



PARTS LIST

REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
	- -	2	SLEEVING 1 3/4" OF (B9B-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A645	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, 15 OHM, 50 W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A253	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
R3	352-114	1	RESISTOR, 62 OHM, 2 W.
R4	350-532	1	RESISTOR, 470 OHM, 1/2 W.
*	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C119
B	334A1850	25 FT	WIRE-FLEXIBLE NO. 20 AWG
C	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 AWG

15HA-23-3/10A

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

REV	REVISION	BY	DATE
C	ADDED WIRE NO. 334A1842		3-14-69
B	" 334A850	EV	3-14-69
A	REV. WIRING TERMINAL 6		1-24-68

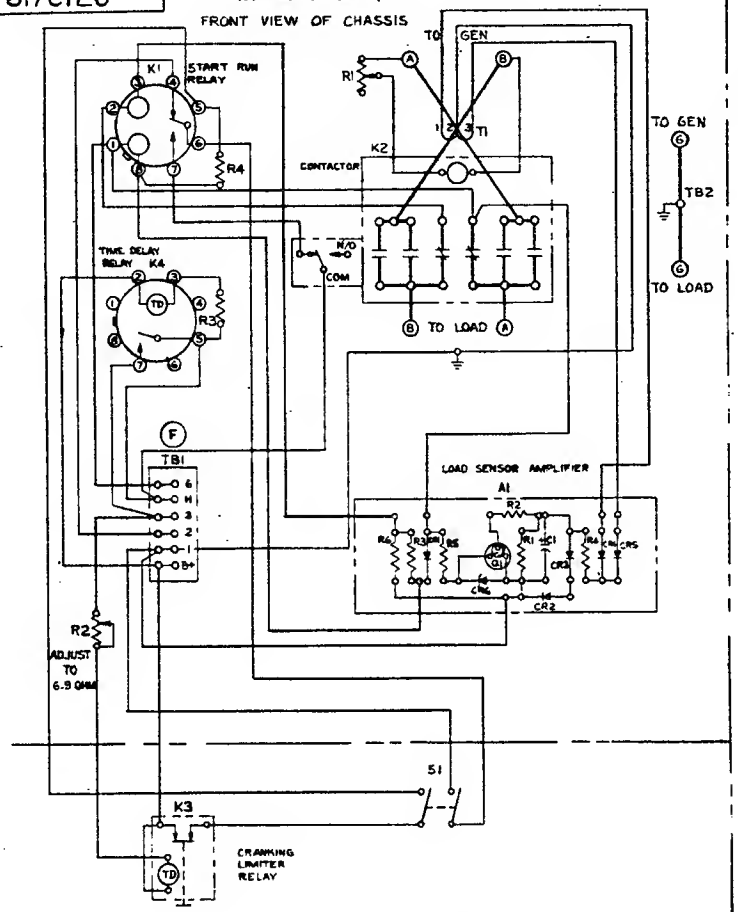
Ongan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 15HA-23-3/10A	DATE 1-18-68	BY CDR
24 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM	
120/240 V., 1 PH., 3 WIRE, 50/60 CY.	AUTOMATIC DEMAND CONTROL	
	DWG NO 617C119	

617C120

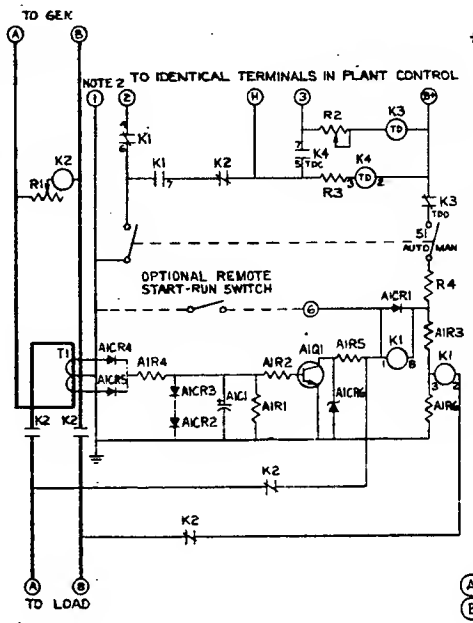
WIRING DIAGRAM

FRONT VIEW OF CHASSIS



REAR VIEW OF DOOR

SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
* K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, 15 OHM, 50W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
R3	352-114	1	RESISTOR, 62 OHM, 2 W
R4	350-984	1	RESISTOR, 750 OHM, 2 W
	98A2045	1	* CAUTION LABEL
	300257573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C120
A	334A1890	25FT	WIRE-FLEXIBLE NO. 20 AWG
B	334A1842	12FT	WIRE-FLEXIBLE NO. 16 AWG

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

15HA-23-3/12A

REV	REVISION	BY	DATE
B	ADDED WIRE NO. 334A1842		11-4-68
A	" " " 334A1890		9-14-68

Onan — DIVISION OF STUDEBAKER CORPORATION

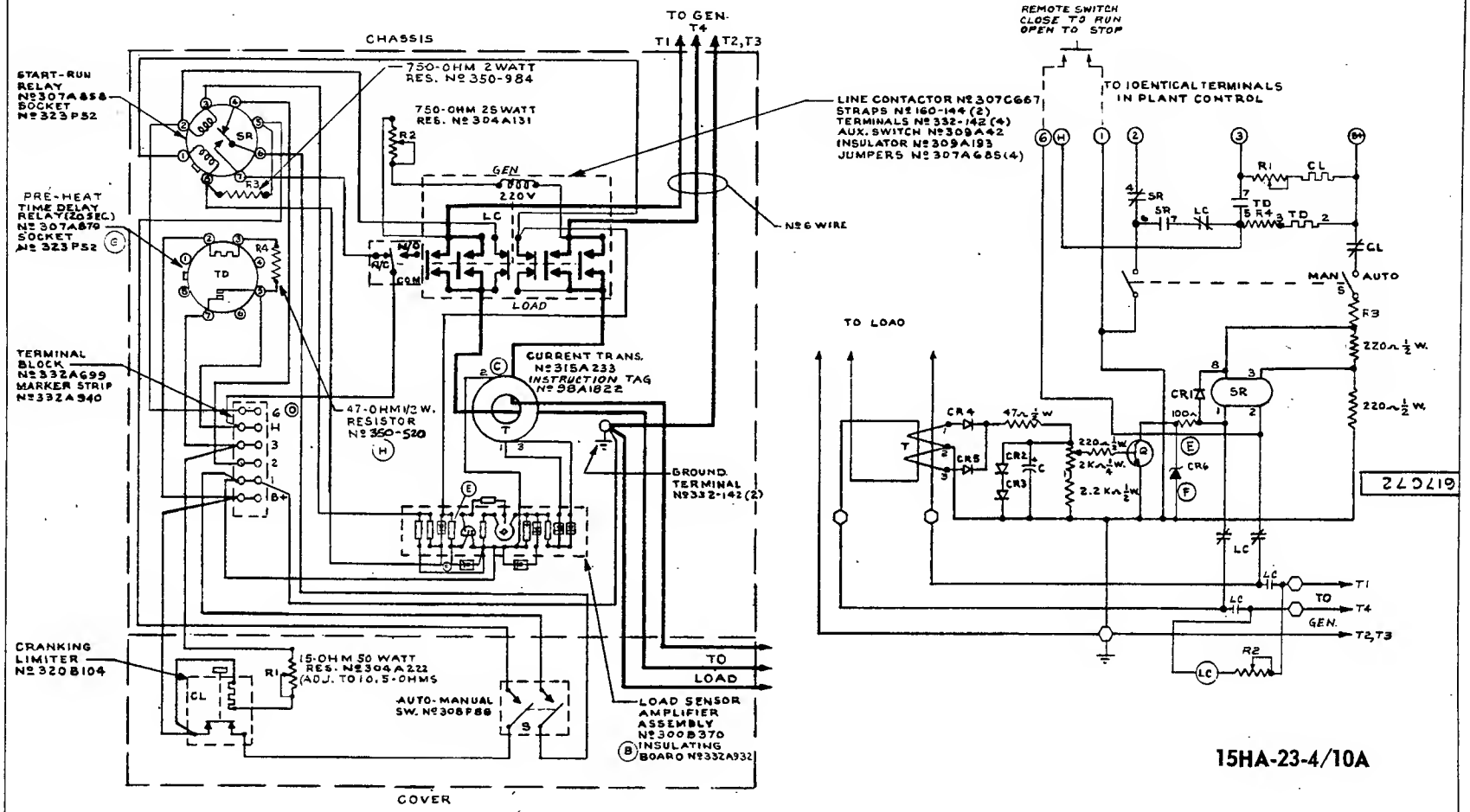
MODEL NO. 15HA-23-3/12A	DRN 1-24-68	BY COR
24 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM	
120/240 V., 1PH., 3 WIRE, 50/60 CY.	AUTOMATIC DEMAND CONTROL	
	DWG NO 617C120	

617C72

PICTORIAL

SCHEMATIC

15HA-23-4/10A



NOTE:
1-WIRES TO LOAD SENSOR AMPLIFIER Nº20
OTHER WIRES Nº20 OR LARGER.

(J) 2-OPERATE WITH NEGATIVE GROUND ONLY

15HA-23-4/10A

617C72

J	ADDED NOTE 2	JV	9-15-66
H	WAS 304A262	JV	4-28-66
G	WAS 307A645	JV	4-28-66
F	ADDED CR6	JV	4-13-66
E	ADDED 100Ω RES	JV	4-13-66
D	ADDED TERMINAL 6	JV	10-29-65
C	MOVED T FROM GEN SIDE	JV	6-13-65
B	WAS 332A707	JV	6-3-65
A	WAS BDX ASSY. 301B258B	JV	6-3-65
LET.	REVISION	CKD	DATE

Onan — DIVISION OF STUDEBAKER CORPORATION

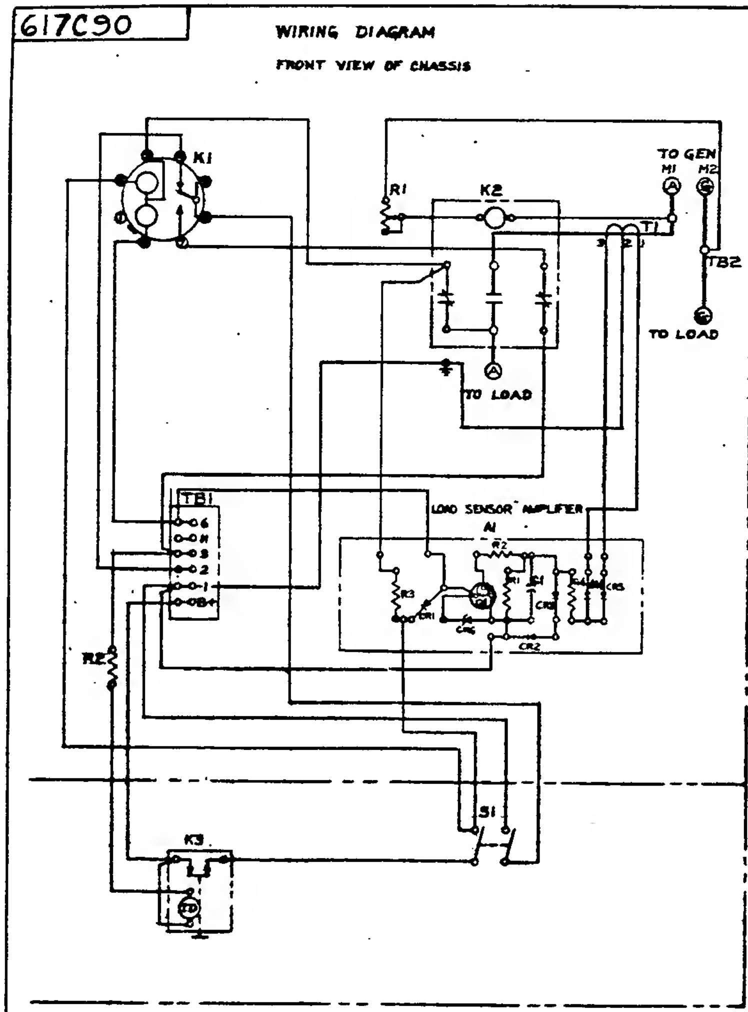
DATE	7-12-65
BY	CKH
CKD	JV, WVB
NAME	AUTOMATIC DEMAND CONTROL WIRING DIAGRAM
DWG NO	617C72

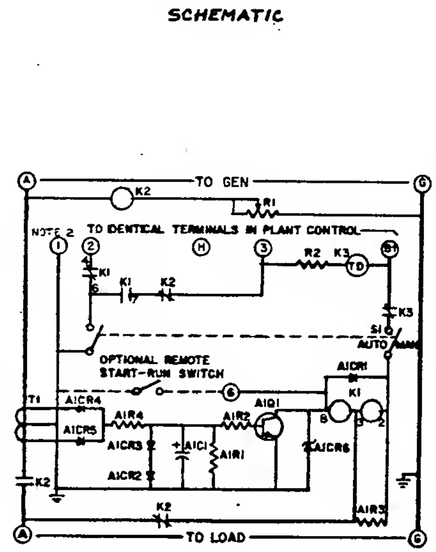
MODEL
15HA-23-4/10A
120-240 VOLT 1PH. 3WIRE 50-60~
32 V. CRANKING

INDEX
FOR
SPEC B CONTROLS

Find the appropriate model and proceed to the indicated page for the wiring diagram.

617C90





REF.DES.	PART NO.	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C663	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10W
S1	308P68	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	89A866	1	NAMEPLATE-CONTROL

Ⓒ (REF. K1 socket) Ⓐ (REF. 98A2045 caution label)

617C90

NOTE:
1- OPERATE WITH NEGATIVE GROUND ONLY

Ⓑ 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

305HA-21/1B

C	WAS 323P52 SOCKET		11-9-67
B	ADDED NOTES 2 & 3		10-31-67
A	ADDED LABEL 98A2045		10-31-67
	SUPSDS DWG SAME NO. DATED 8-22-66		

Onan — Division of Studebaker Corporation

CCR — WIB

305HA-21/1B
12 VOLT CRANKING
120V., 1PH., 2W., 50/60CY.

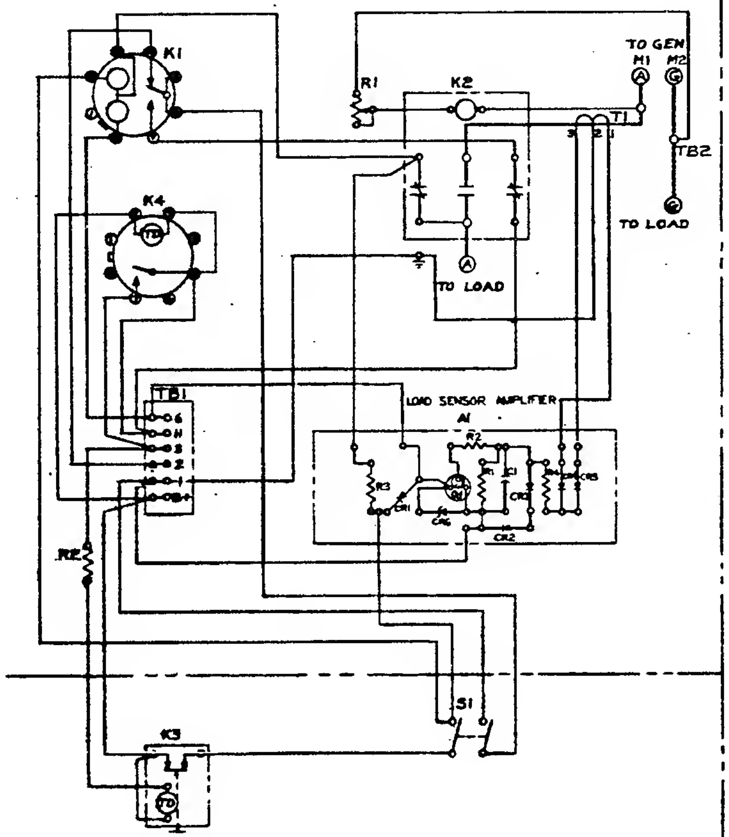
SCHEMATIC & WIRING DIAGRAM
AUTOMATIC DEMAND CONTROL

617C90

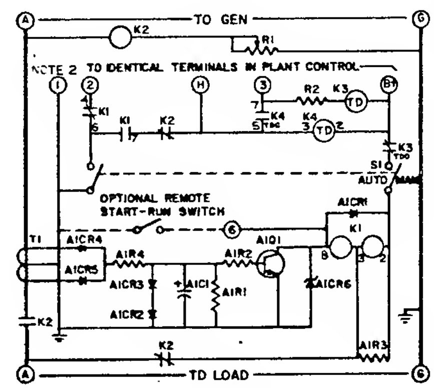
617C91

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF.DES	PART NO	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C663	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY, PREHEAT(20S)
	323P380	1	SOCKET
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1528	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C91

305HA-21/10B

NOTE:
1- OPERATE WITH NEGATIVE GROUND ONLY

(B) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

D	WAS 323P52 SOCKET	[illegible]
C	[illegible]	[illegible]
B	[illegible]	[illegible]-67
A	[illegible]	[illegible]-67

ONAN

305HA-21/10B
12 VOLT CRANKING
120V., 1PH., 2W., 50/60CY.

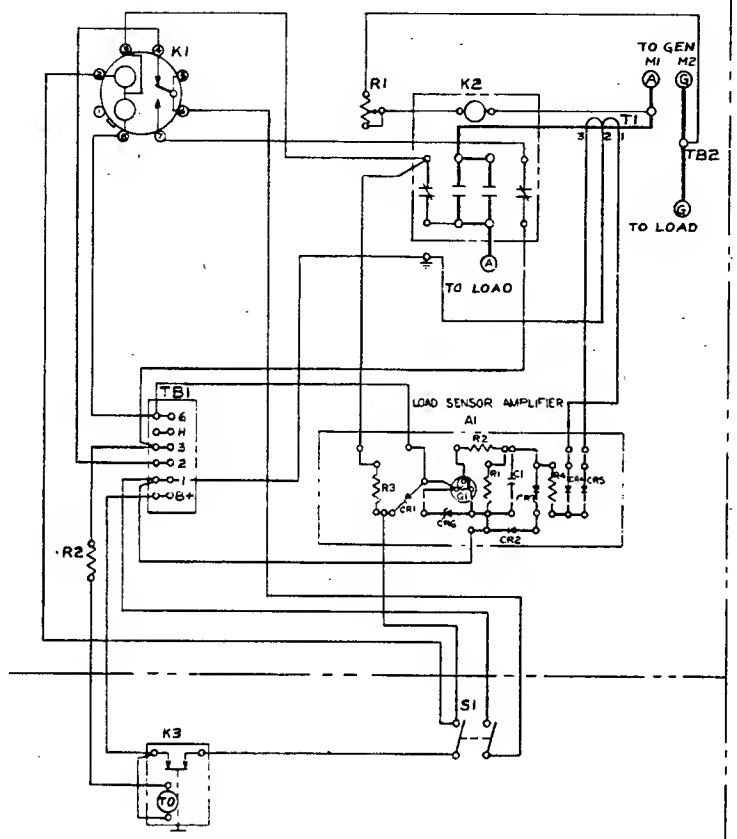
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

617C91

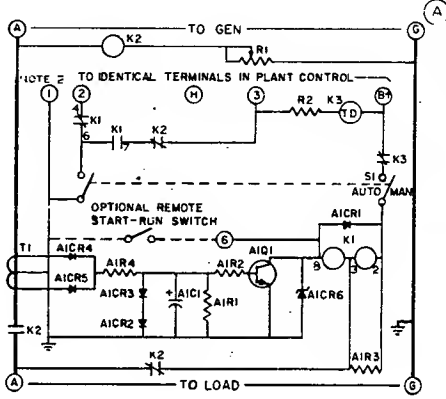
617C92

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
	98A2045	1	CAUTION LABEL
R1	304A282	1	RESISTOR 300-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	R15-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

26D719

NOTE:

1 - OPERATE WITH NEGATIVE GROUND ONLY

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

7.5HA-21/1B

D	ADDED DASH NO.	JV	1-16-70
C	WAS 323P52 SOCKET	JV	11-9-67
B	ADDED		11-1-67
A	ORIGINAL RELEASE		11-1-67

SUPSDS DWG SAME NO DATED 8-22-66

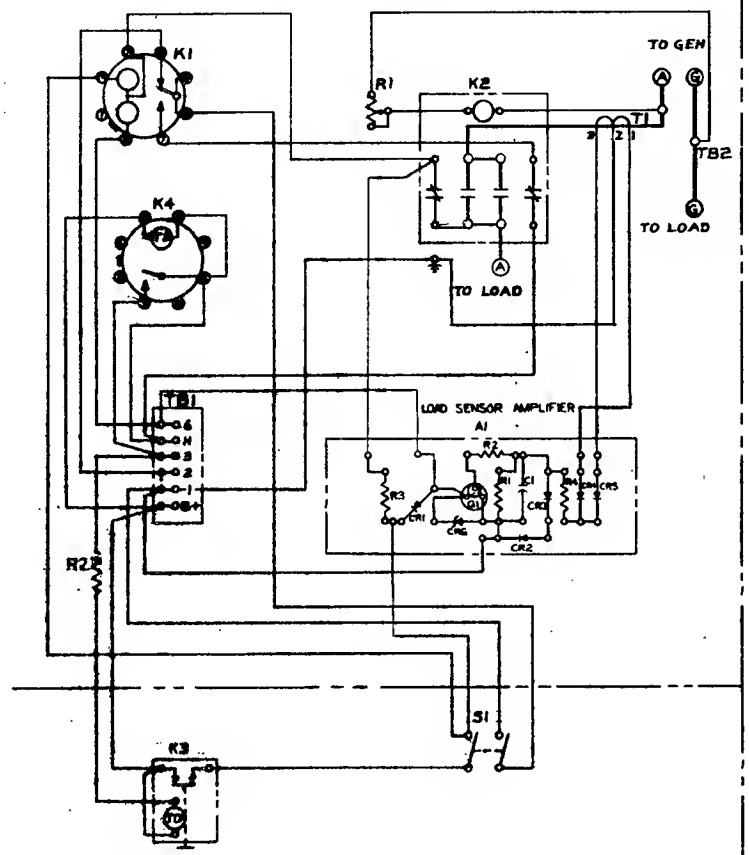
Onan DIVISION OF STUDEBAKER CORPORATION

-01	7.5HA-21/1B	2-24-67	CDR
	12 VOLT CRANKING	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL	
	120V., 1PH., 2W., 50/60CY.	DWG NO 617C92	

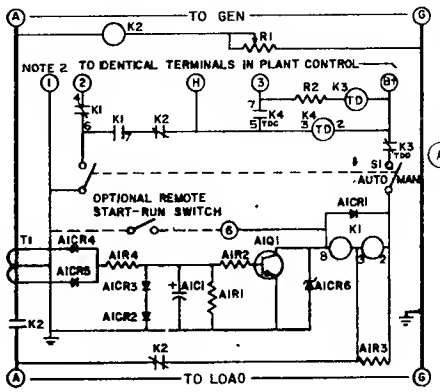
617C93

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
(C) *	323P380	1	SOCKET
K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY,PREHEAT(20S)
(D)	323P380	1	SOCKET
R1	304A282	1	RESISTOR,300-OHM,25W
R2	304A192	1	RESISTOR, 3-OHM, 10 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY- CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
(A) *	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

E60419

7.5HA-21/10B

NOTE:

1 - OPERATE WITH NEGATIVE GROUND ONLY

(B) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

LET	REVISION	CHK	DATE
D	WAS 323PS2 SOCKET	JV	11-9-67
C	" " "	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	10-31-67
A	ADDED LABEL 98A2045	JV	10-31-67
	SUPSDS DWG SAME Nº DATED 8-23-66		

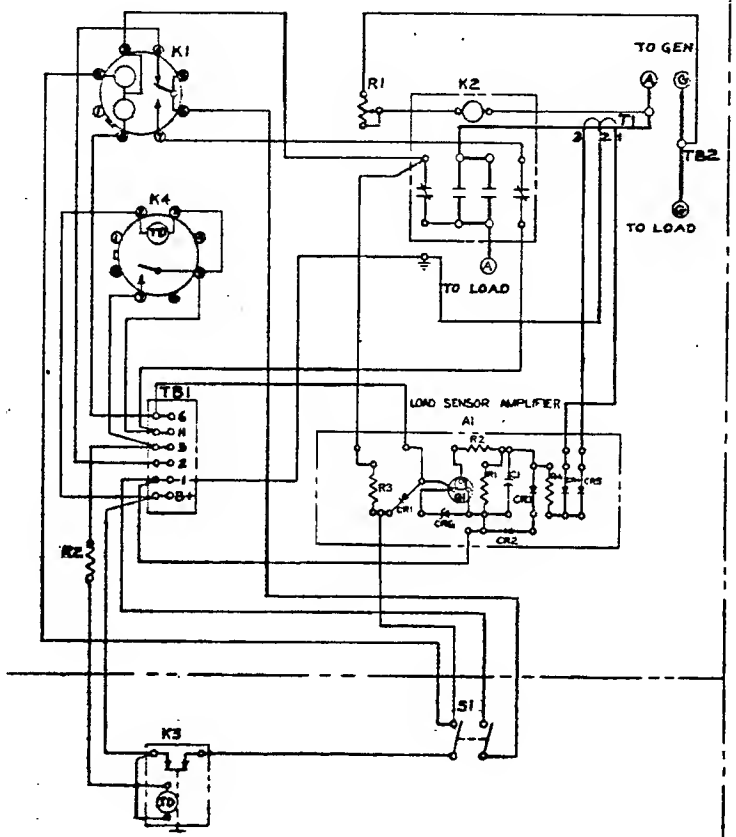
Onan — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minnesota

MODEL NO	DATE	BY	CK'R	
7.5HA-21/10B	2-24-67	COR	JIM VINT	WJB
12 VOLT CRANKING	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL			
120V., 1PH., 2W., 50/60CY.	DWG NO 617C93			

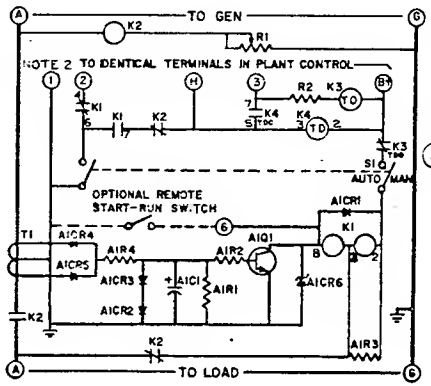
617C94

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
* K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A689	1	RELAY-TIME DELAY, STARTING(SS)
	323P380	1	SOCKET
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
*	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	90C1B15	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	501D2586	1	TRIM
	51BP237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X⅝ LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C94

7.5HA-21/12B

NOTE:

1- OPERATE WITH NEGATIVE GROUND ONLY

(B) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

D	MAS 323P52 SOCKET		
C	" "		
B			
A			
	SUPSDS, DWG SAME NO DATED 8-23-66		
LTR	REVISION	CKD	DATE

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO	7.5HA-21/12B	DATE	2-24-67
	12 VOLT CRANKING	BY	CDB
	120V, 1PH, 2W, 50/60CY.	CKD	
		APVD	

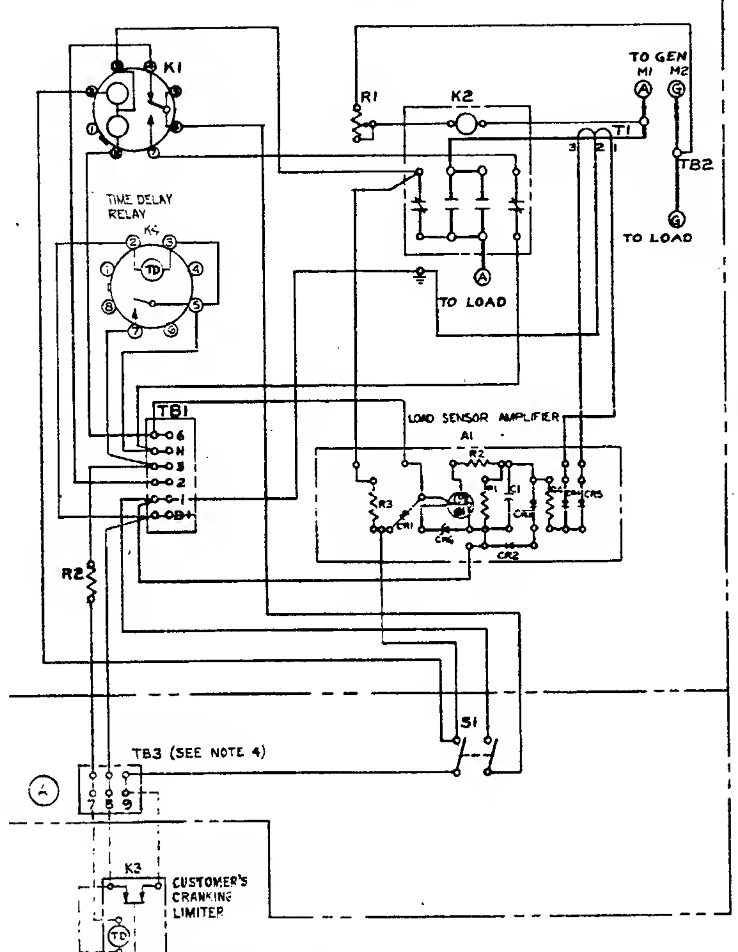
SCHEMATIC & WIRING DIAGRAM
AUTOMATIC DEMAND CONTROL

DWG NO 617C94

617C129

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



NOTE:

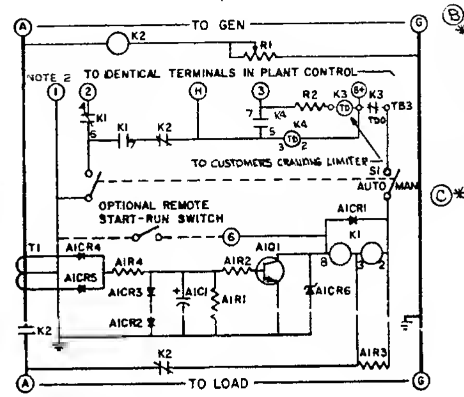
1- OPERATE WITH NEGATIVE GROUND ONLY

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

4. PAINT BACK OF MARKER STRIP WHITE, BEFORE MTG IT IN BOX.

SCHEMATIC



PARTS LIST

REF DES	PART NO	QTY	DESCRIPTION
A1	300B437	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	98A2045	1	CAUTION LABEL
K3	320B104(REF)	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY PREHEAT (20S)
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
TB3	332A611	1	BLOCK-TERMINAL
	332A612	1	STRIP-MARKER (SEE NOTE 4)
	323P380	1	SOCKET
	301D2573	1	CONTROL BOX (MODIFY)
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C129

7.5HA-21/17B

C	323P380 ADDED		2-6-70
B	[illegible] ADDED		2-6-70
A	ADDED TERM MARKINGS ON TB3		9-5-69
LET	REVISION	CKR	DATE

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO 7.5HA-21/17B

12 VOLT CRANKING

120V., 1PH., 2W., 50/60CY.

DATE 7-2-69 DR CDR CK G.F.T.

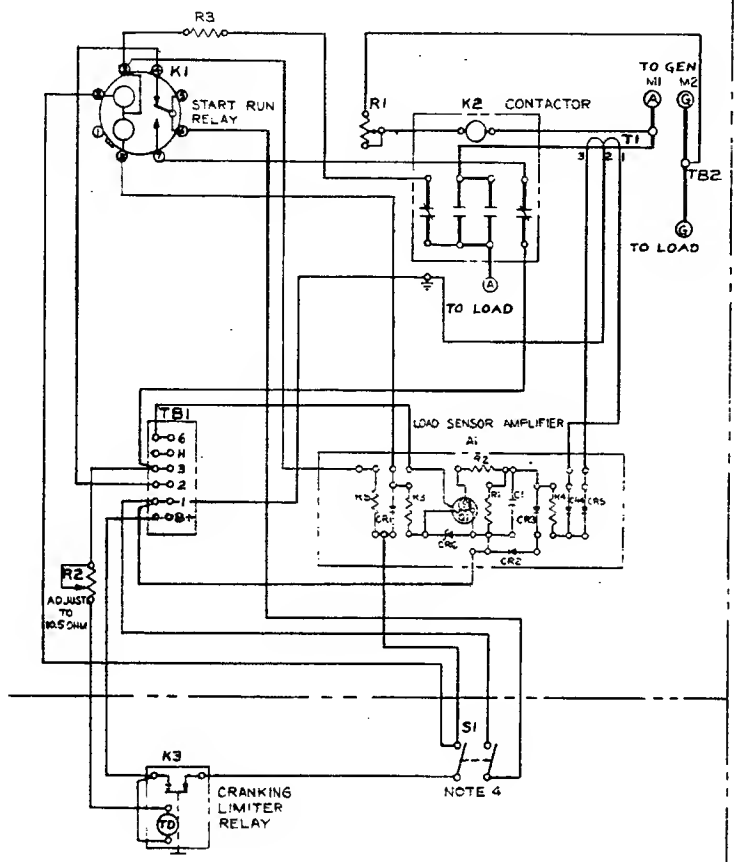
WIRING DIAGRAM CONTROL - AUTOMATIC DEMAND

DWG NO 617C129

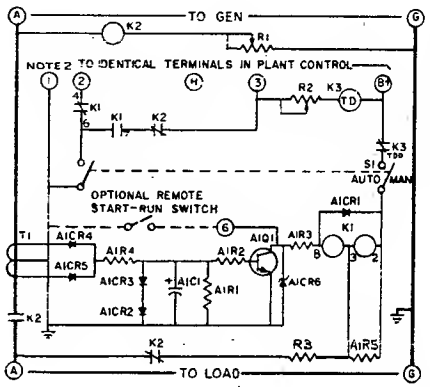
617C113

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF DES	PART NO	QTY	DESCRIPTION
A1	300B488	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
(C)	323P380	1	SOCKET
K2	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A222	1	RESISTOR, 15-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A520	1	RESISTOR, 90-OHM, 10 W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32x5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
(A)	98A2045	1	LABEL, CAUTION
(D)	334A1890	25FT	WIRE-FLEXIBLE NO. 20 AWG
(E)	334A1842	12FT	WIRE-FLEXIBLE NO. 16 AWG
			E110219

NOTES:

(B) 1. OPERATE WITH NEGATIVE GROUND ONLY.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

4. MOUNT SWITCH WITH FINISHING NUT ON THE FRONT PANEL.

7.5HA-21-4/1B

F	ADDED DASH NO.	12-[illegible]-69
E	ADDED WIRE NO. 334A1842	3-14-69
D	[illegible] 334A1890	3-14-69
C	HAS 323P82 SOCKET	[illegible]
B	ADDED NOTES	[illegible]
A	ADDED 98A2045	[illegible]
LTR	REVISION	CHK DATE

Onan — DIVISION OF STUDEBAKER CORPORATION

(F) -01 | DWG. NO. 7.5HA-21-4/1B | DATE [illegible] | BY CDR | CHK [illegible]

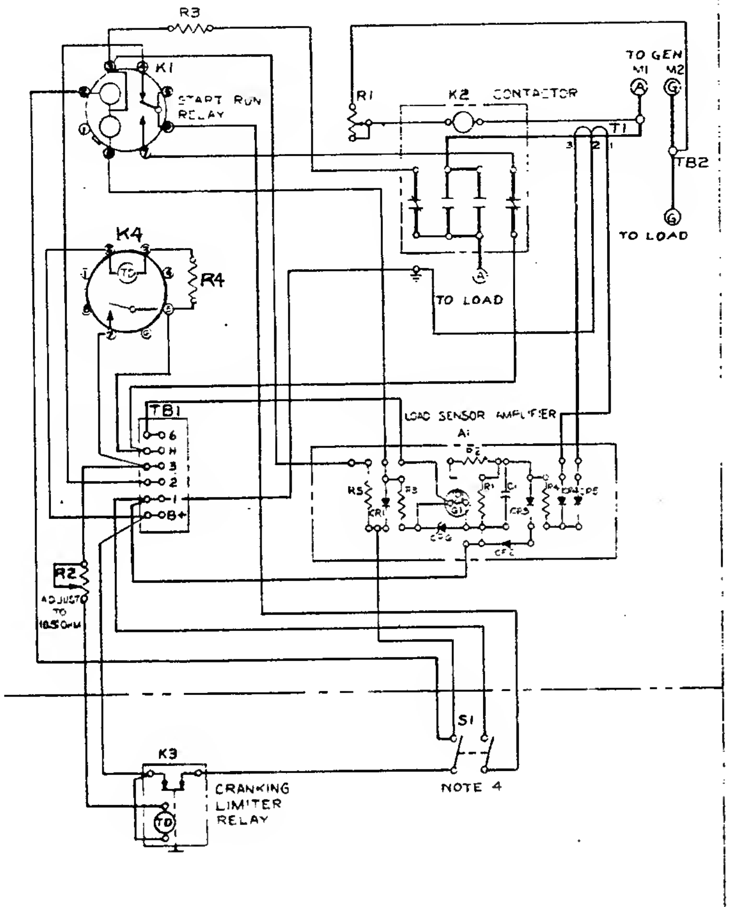
32 VOLT CRANKING

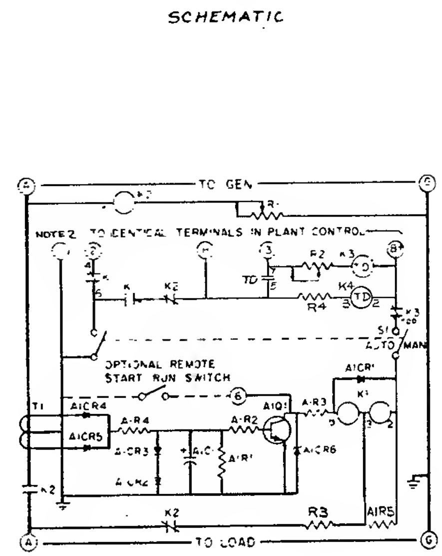
120 V., 1PH., 2W., 60/50EY.

SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG NO. 617C113

617C114





PARTS LIST

REF DES	PART NO	QTY	DESCRIPTION
A1	300B49E	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	2	SOCKET
K2	307C665	1	CONTACTOR
	332-42	2	TERMINAL
	307-685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A679	1	RELAY-TIME DELAY 20 SEC.
R4	350-520	1	RESISTOR-47 OHM 1/2 W.
R1	304A282	1	RESISTOR, 300-OHM, 25W
R2	304A222	1	RESISTOR, 15-OHM, 50 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
R3	304A520	1	RESISTOR, 30-OHM, 10 W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1957	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL
	98A2045	1	LABEL, CAUTION
	334A1890	25 FT.	WIRE-FLEXIBLE NO. 20 AWG
	334A1842	12 FT.	WIRE-FLEXIBLE NO. 16 AWG

617C114

7.5HA-21-4/10B

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.
3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.
4. MOUNT SWITCH WITH FINISHING NUT ON THE FRONT PANEL.

G	ADDED DASH NO. [illegible]
F	ADDED [illegible]
E	[illegible]
D	WAS 323P53 [illegible]
B	[illegible]
A	WAS [illegible]

Onan — DIVISION OF STUDEBAKER CORPORATION

-01	7.5HA-21-4/10B
	32 VOLT CRANKING
	120 V, 1PH, 2W., 50/60CY.

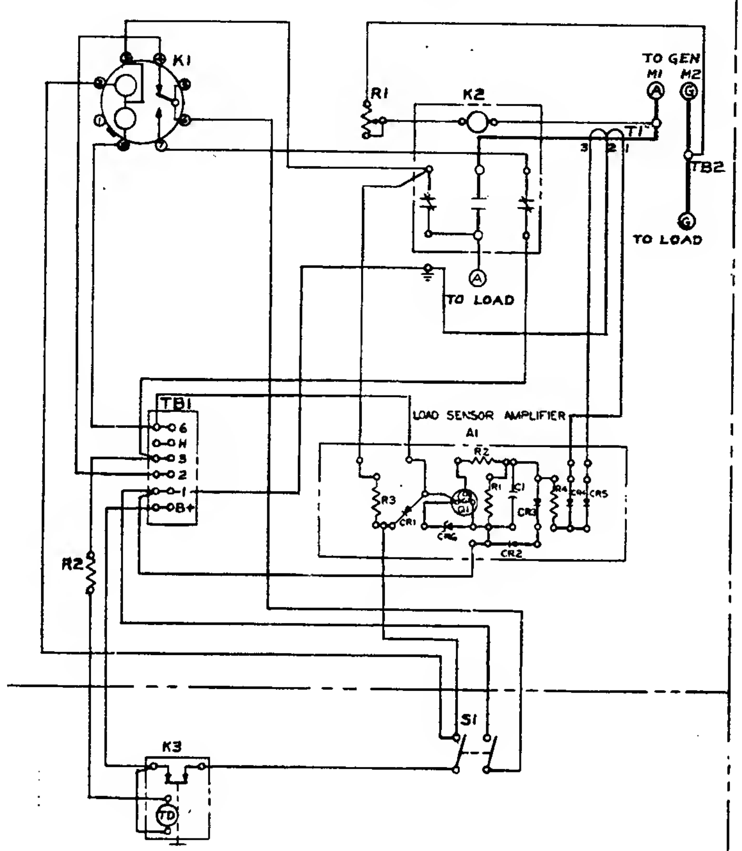
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG NO. 617C114

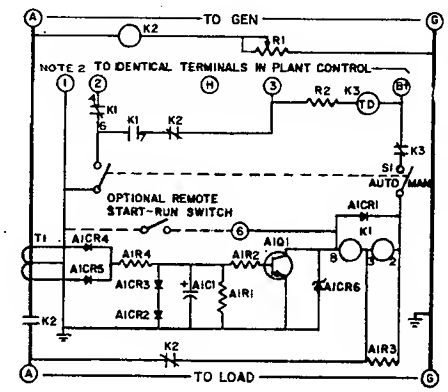
617C95

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF.DES.	PART NO.	QTY	DESCRIPTION
A1	300B443	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C664	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X3/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C95

7.5HA-22/1B

NOTE:

1- OPERATE WITH NEGATIVE GROUND ONLY

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

LET	REVISION	CKD	DATE
C	WAS 323P52 SOCKET	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	10-31-67
A	ADDED LABEL 98A2045	EV	10-31-67
	[illegible]		[illegible] 22-66

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 7.5HA-22/1B

12 VOLT CRANKING

240V., 1PH., 2W., 50/60CY.

DATE 2-24-[illegible] DR CFR CK [illegible] WJB

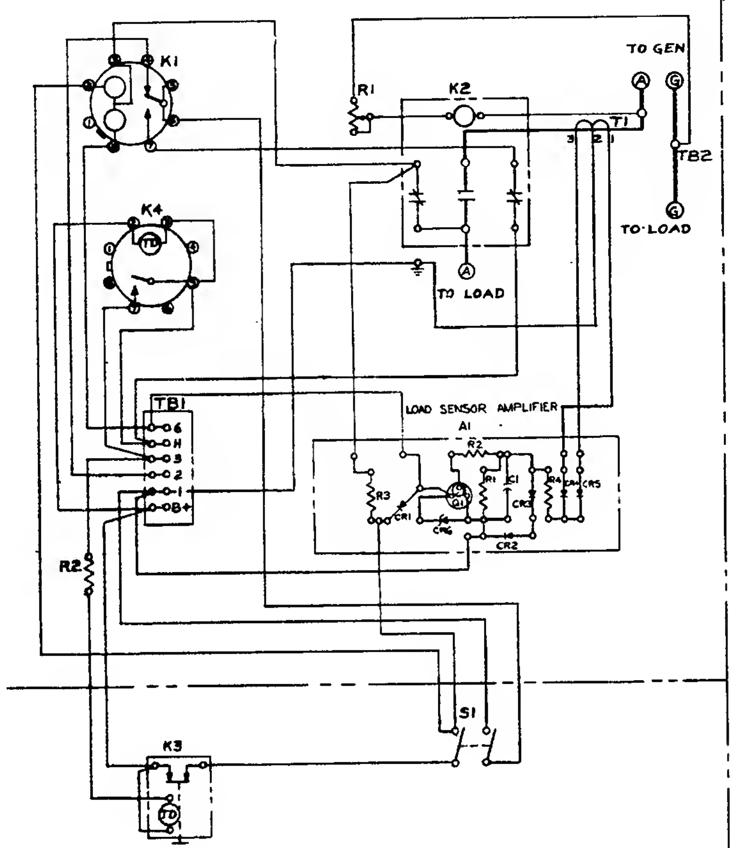
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG NO 617C95

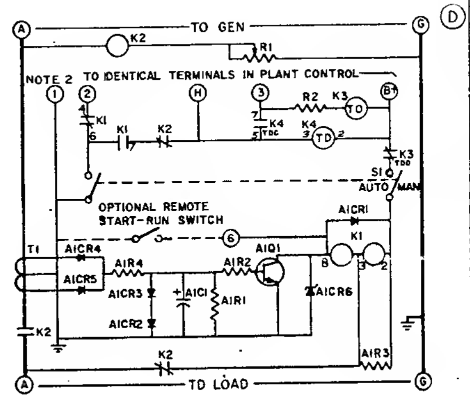
617C96

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B443	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C664	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C96

7.5HA-22/10B

NOTE:

1- OPERATE WITH NEGATIVE GROUND ONLY

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

(B) 3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

LTR	REVISION	CKD	DATE
D	WAS 323P52 SOCKET	JV	11-9-67
C	" "	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	10-31-67
A	ADDED LABEL 98A2045		10-31-67
	S.P. ... SAME N. DATED		8-23-66

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 7.5HA-22/10B

12 VOLT CRANKING

240 V., 1 PH., 2W., 50/60 CY.

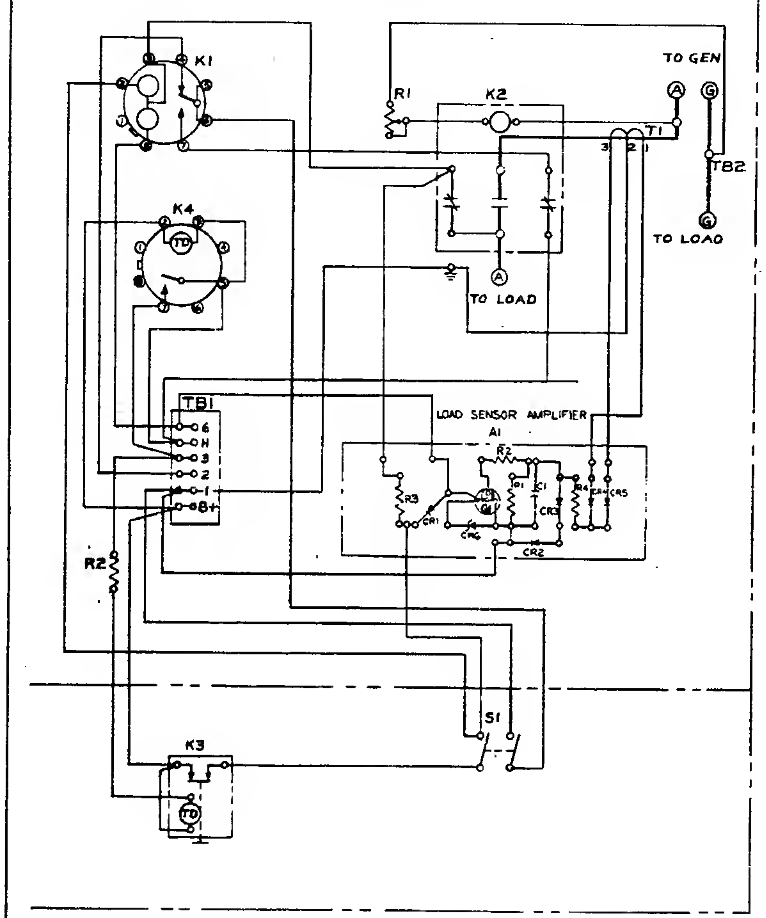
SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL

DWG NO 617C96

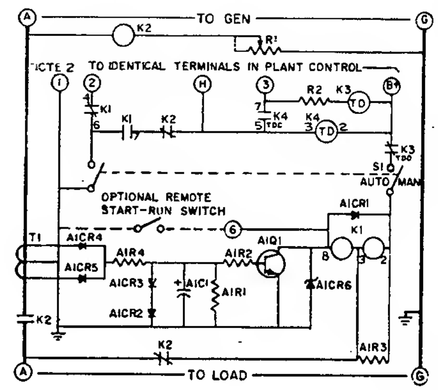
617C97

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B443	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C664	1	CONTACTOR
	332-517	2	TERMINAL
	98A2045	1	CAUTION LABEL
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A689	1	RELAY-TIME DELAY, STARTING (5S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A192	1	RESISTOR, 3-OHM, 10 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL-GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

617C97

7.5HA-22/12B

NOTE:
1 - OPERATE WITH NEGATIVE GROUND ONLY

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER

LTR	REVISION	CK	DATE
D	WAS 323P52 SOCKET	JV	11-9-67
C	" " "	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	10-31-67
A	ADDED LABEL 98A2045	JV	10-31-67
	[illegible] SAME [illegible]		[illegible]-66

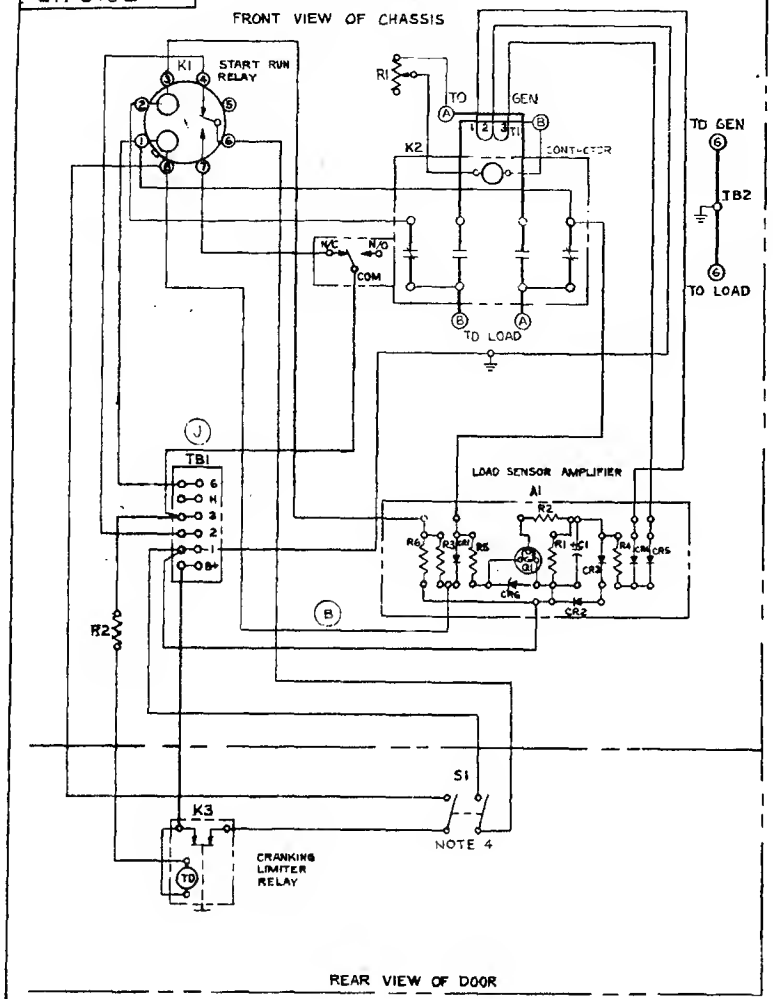
Onan DIVISION OF STUDEBAKER CORPORATION

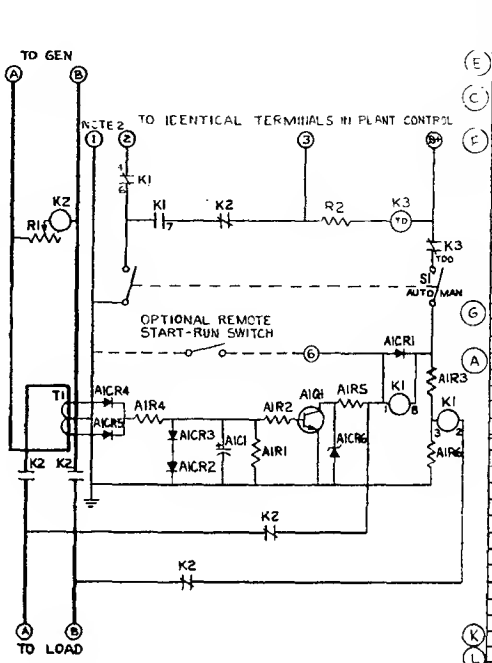
7.5HA-22/12B
12 VOLT CRANKING
240 V., 1 PH., 2 W., 50/60 CY.

SCHEMATIC & WIRING DIAGRAM
AUTOMATIC DEMAND CONTROL

617C97

617C102





REF DES	PART NO	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P350	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL - GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			2017C102
	334A1890	25FT	WIRE-FLEXIBLE NO. 20 AWG
	334A1842	12FT	WIRE-FLEXIBLE NO. 16 AWG

7.5HA-23/1B

(H) 4. MOUNT SWITCH WITH FINISHING NUT ON THE FRONT PANEL.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

(D) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

LET.	REVISION	ENG	CHK	DATE
L	ADDED WIRE NO. 334A1842	JV	WB	3-14-69
K	" " " 334A1890	JV	WB	3-14-69
J	REV. WIRING TERMINAL 6	JV	WB	1-24-68
H	ADDED NOTE 4	JV	WB	11-13-67
G	WAS 315A233	JV	WB	
F	307A969 & A970 REMOVED	JV	WB	
E	WAS 323P52 SOCKET	JV	WB	11-9-67
D	ADDED NOTES 2 & 3	JV	WB	11-1-67
C	ADDED LABEL 98A2045	JV	WB	11-1-67
B	MOVED LEAD S1 TO K1	JV	WB	7-25-67
A	WAS 332-142	JV	WB	5-1-67

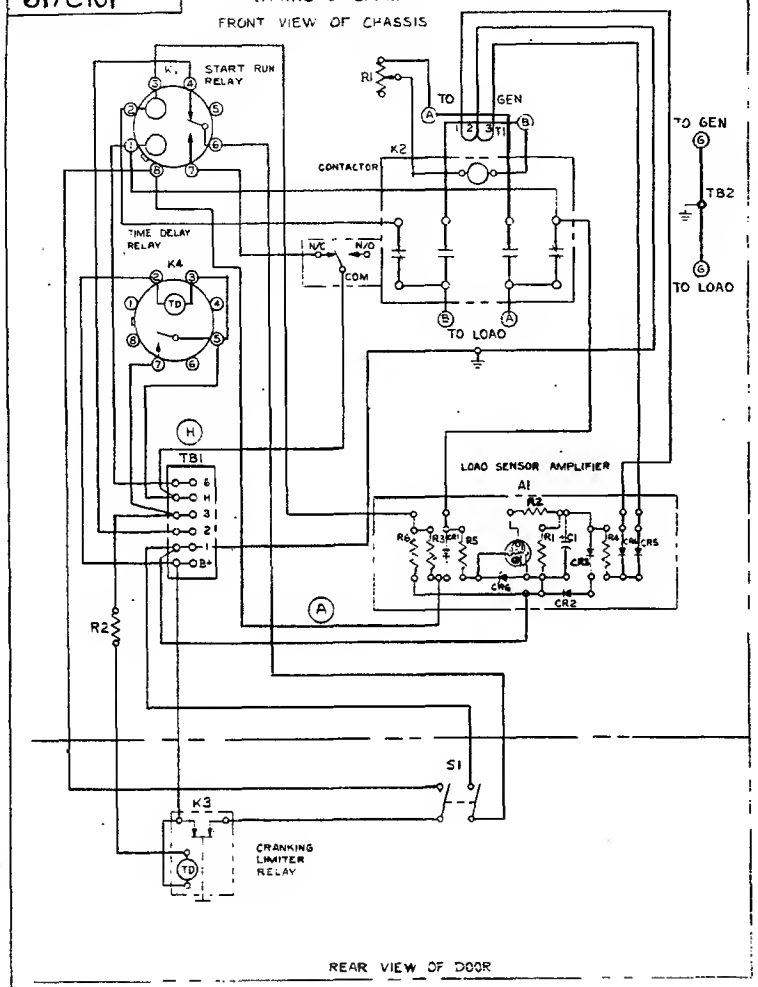
Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 7.5HA-23/1B	DATE 12-29-66	BY CDR	CHK JM VINT WJB
12 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL		
120/240 V, 1PH., 3 WIRE, 50/60 CY.	DWG. NO. 617C102		

617C101

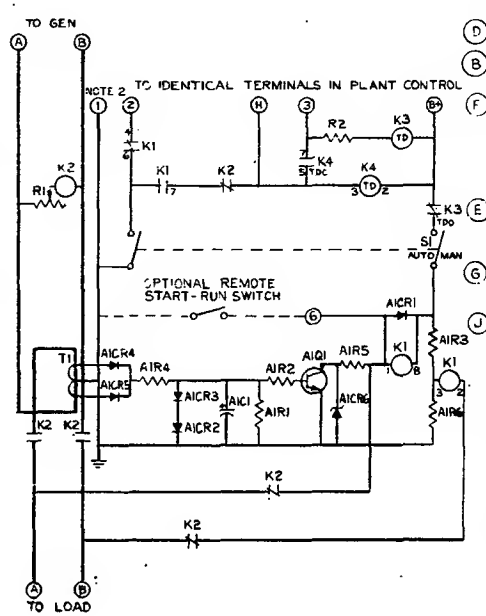
WIRING DIAGRAM

FRONT VIEW OF CHASSIS



REAR VIEW OF DOOR

SCHEMATIC



PARTS LIST			
REFOES	PART NO.	QTY	DESCRIPTION
AI.	309B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
KI	307A858	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	3C9A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	3208104	1	RELAY - CRANKING LIMITER
K4	307A645	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
SI	308PBB	1	SWITCH - AUTO MANUAL
TI	315A291	1	TRANS. ASSY - CURRENT
TBI	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL - GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1849	1	SILK SCREEN
	301B2586	1	TRIM
	51BP237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	650-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL

1015191

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

(C) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

7.5HA-23/10B

LET	REVISION	CHK	DATE
J	TB2 WAS 332-142	JV	2-20-68
H	REV. WIRING TERMINAL 6	JV	1-24-68
G	ADDED 315A291	JV	11-10-67
F	REM. 307A949, 307A970 & 315A233	JV	11-10-67
E	WAS 323P52 SOCKET	JV	11-9-67
D	" " "	JV	11-9-67
C	ADDED NOTES 2 & 3	JV	11-1-67
B	ADDED LABEL 98A2045	JV	
A	MOVED LEAD SI TO K1	JV	7-25-67

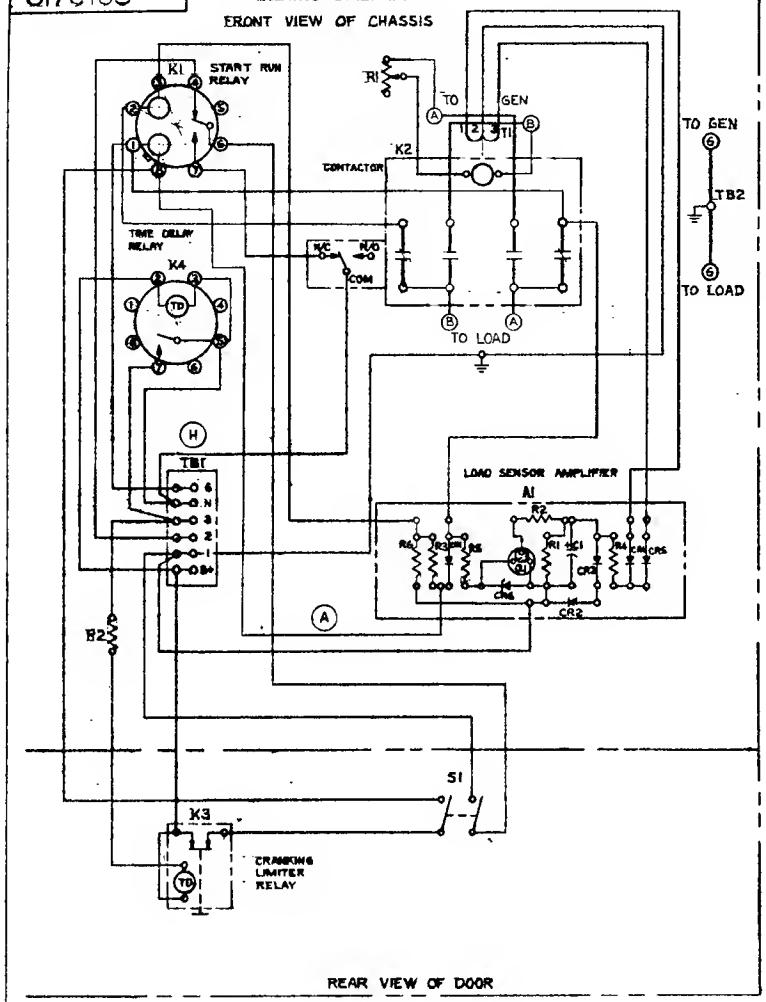
Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 7.5HA-23/10B	DATE 12-23-66	BY COR	CHK'D BY WJB
12 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM		
120/240 V., 1 PH., 3 WIRE, 50/60 CY.	AUTOMATIC DEMAND CONTROL		
	DWG NO 617C101		

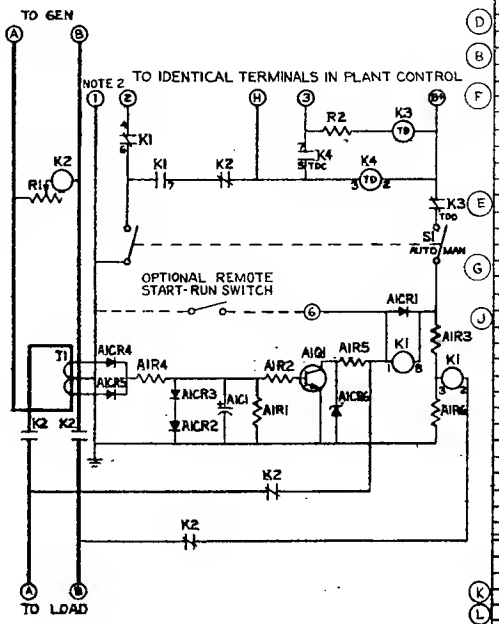
617C103

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST			
REF DES.	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 SEC)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-517	2	TERMINAL - GROUND
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	B15-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C103
	334A1890	2.5 FT	WIRE-FLEXIBLE NO.20 AWG
	334A1842	12 FT	WIRE-FLEXIBLE NO.10 AWG

7.5HA-23/12B

LET.	REVISION	BY	DATE
L	WAS N=10	JV	7-9-69
K	WAS N=12	JV	7-9-69
L	ADDED WIRE NO.334A1842	JV	3-14-69
K	" " " 334A1890	JV	3-14-69
J	TB2 WAS 332-142	JV	2-20-68
H	REV. WIRING TERMINAL 6	JV	1-24-67
G	ADDED 315A291	JV	11-10-67
F	REM. 307A969, 307A970 & 315A233	JV	11-10-67
E	WAS 323P52 SOCKET	JV	11-9-67
D	" " "		11-9-67
C	ADDED NOTES 2 & 3	JV	11-1-67
B	ADDED LABEL 98A2045	JV	11-1-67
A	MOVED LEAD S1 TO K1	JV	7-25-67

Onan — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minnesota

MODEL NO.	7.5HA-23/12B
	12 VOLT CRANKING
	120/240 V., 1PH., 3 WIRE, 50/60 CY.
DATE	12-29-66
BY	CDR
CK'D	Jim Vint WJB
NAME	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
DWG. NO.	617C103

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

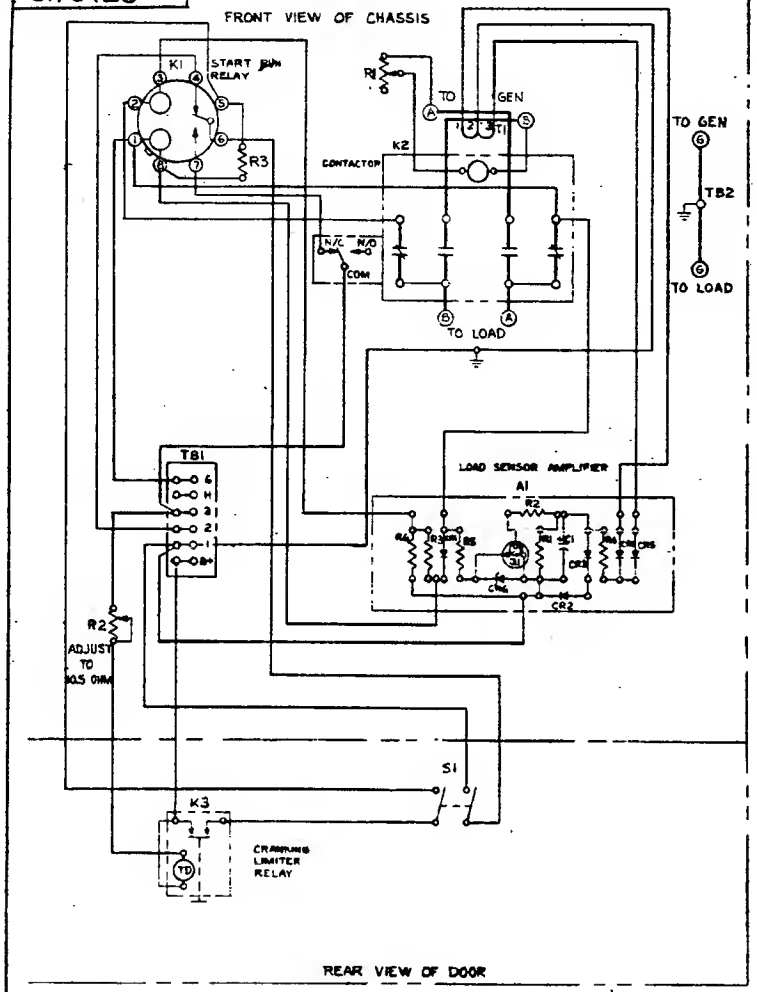
(C) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

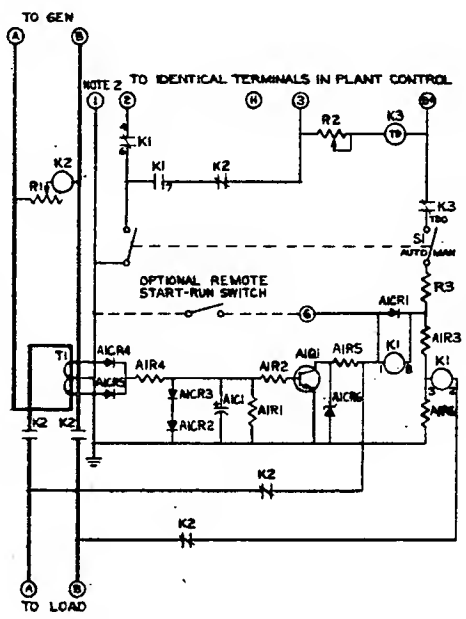
617C128

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P321	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, 15 OHM, 50W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
R3	350-984	1	RESISTOR, 750 OHM, 2W
	301D2573	1	CONTROL BOX
	98C1915	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C128
	334A1654	12 FT	NO. 20 WIRE, WHITE
	332-801	14	TERMINAL LUG, #6
	332-802	2	TERMINAL LUG, #8
	332-803	3	TERMINAL LUG, #10
	880-11	1 OZ	SOLDER, WIRE #16 RESIN CORE

7.5HA-23-4/1B

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

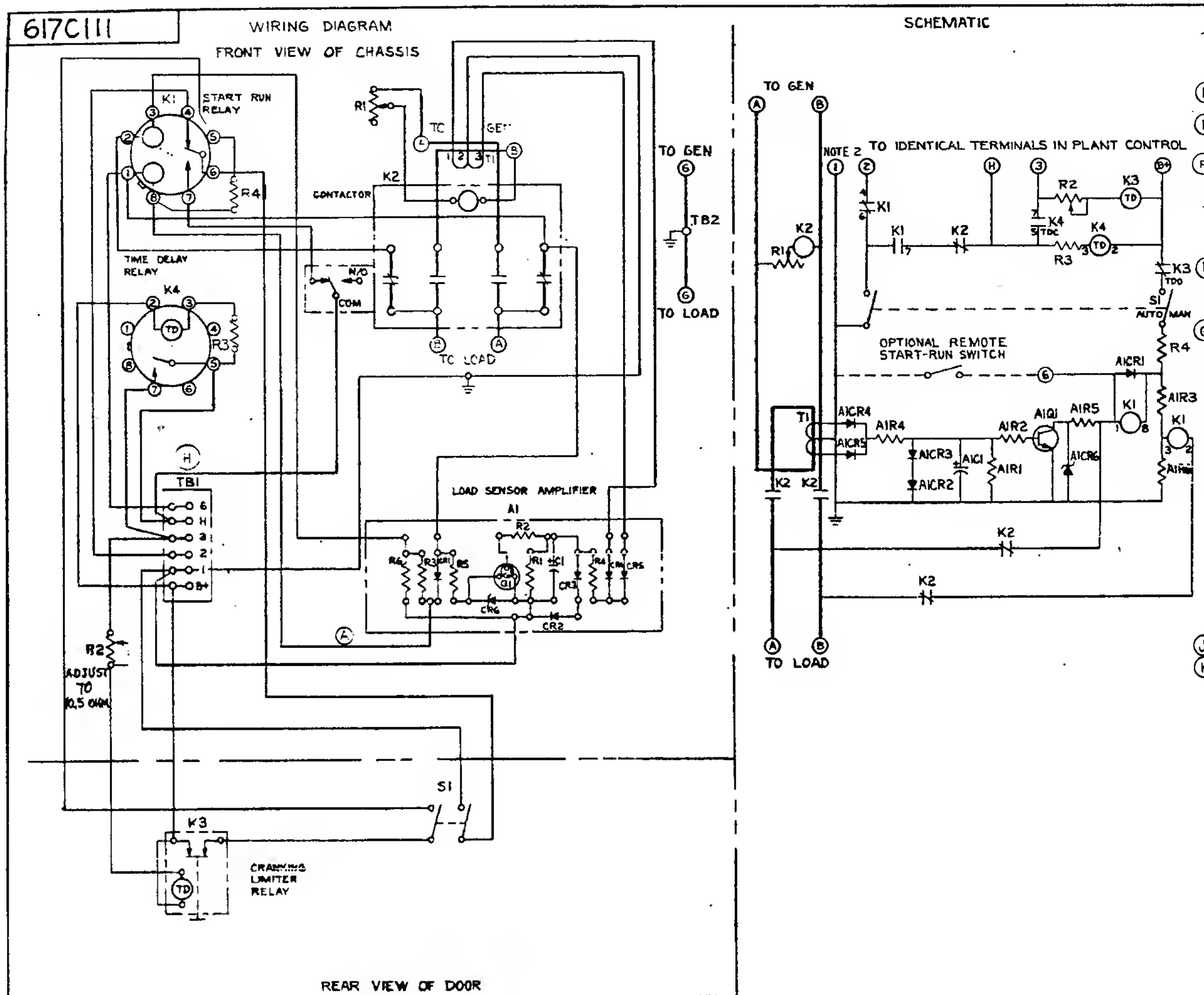
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1. - OPERATE WITH NEGATIVE GROUND ONLY

NOTE:
UNLESS OTHERWISE NOTED, ALL COMPONENTS ARE SHOWN IN THE DE-ENERGIZED POSITION.

ACCNT NO. 7.5HA-23-4/1B
32 VOLT CRANKING
120/240 V, 1PH, 3 WIRE, 50/60 CY

Onan DIVISION OF STUDEBAKER CORPORATION
DATE 6-21-68 BY TJB
SCHEMATIC & WIRING DIAGRAM
AUTOMATIC DEMAND CONTROL
DWG NO 617C128



REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	98A2045	1	CAUTION LABEL
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A579	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, 15 OHM, 50W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A291	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
R3	350-520	1	RESISTOR, 47 OHM, 1/2 W
R4	350-984	1	RESISTOR, 750 OHM, 2 W
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C111
	334A1890	2.5 FT	WIRE - FLEXIBLE NO. 20 AWG
	334A1842	12 FT	WIRE - FLEXIBLE NO. 16 AWG

7.5HA-23-4/10B

LTR	REVISION		DATE
K	ADDED WIRE NO 334A1842		3-4-69
J	" " " 334A 1890		
H	REV. WIRING TERMINAL 6		11-24-68
G	ADDED 315A291		
F	REM. 307A565, 307A575 & 315A233		11-6-67
E	WAS 323P52 SOCKET		-3-67
D	" " "		-9-67
C	ADDED NOTES 2 & 3		
B	ADDED LABEL 98A2045		
A	MOVED WIRE ...		6-5-67

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 7.5HA-23-4/10B
32 VOLT CRANKING
120/240 V., 1 PH, 3 WIRE, 50/60 CY.

DATE 2-1-67 DR CDR CKD - W.F.
NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
DWG NO 617C111

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

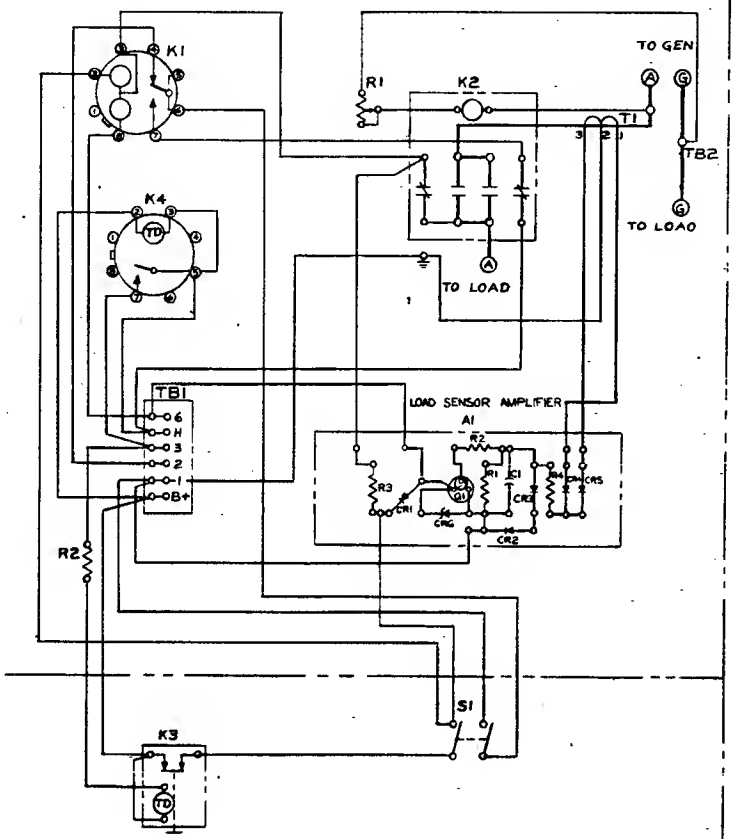
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

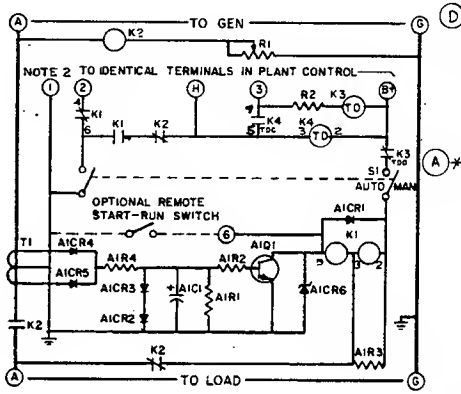
617C98

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF DES	PART NO	QTY	DESCRIPTION
A1	300B443	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645	1	RELAY-TIME DELAY, PREHEAT(20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750-OHM, 25W
R2	304A152	1	RESISTOR, 3-OHM, 10W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-178	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

86DL19

15.0HA-22/10B

NOTE:

1- OPERATE WITH NEGATIVE GROUND ONLY

(B) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

LTR	REVISION	CHK	DATE
D	WAS 323P52 SOCKET	JV	11-9-67
C	" " "	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	10-31-67
A	ADDED LABEL 98A2045	JV	10-31-67
	SUPSDS LWG AVE N-	DATE	8-23-66

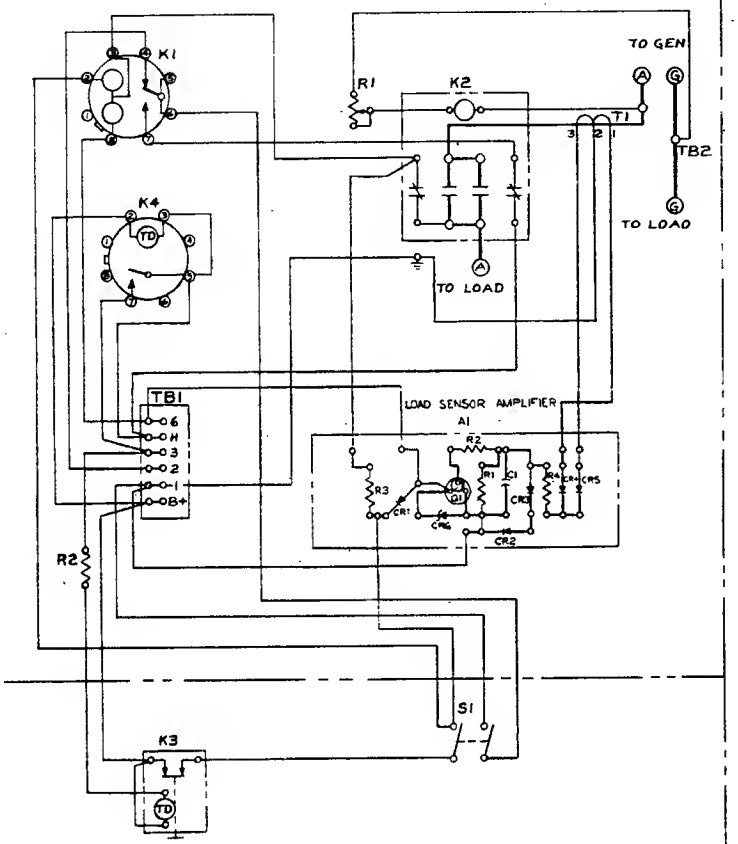
Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 15.0HA-22/10B	DATE 2-24-67	DR	CHK Jim Vint WJB
12 VOLT CRANKING	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL		
240V., 1PH., 2W., 50/60CY.	DWG NO 617C98		

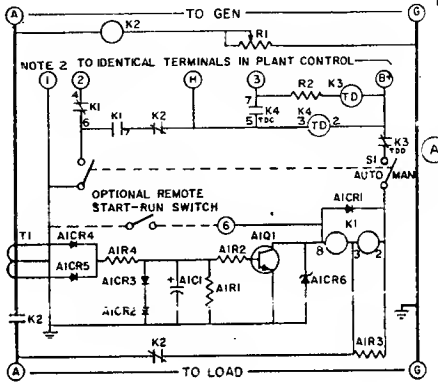
617C99

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO	QTY	DESCRIPTION
A1	300B443	1	AMPLIFIER ASSY-LOAD SENSOR
	332A932	1	BOARD-INSULATING
K1	307A62	1	RELAY-START RUN
	323P380	1	SOCKET
K2	307C666	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A689	1	RELAY-TIME DELAY,STARTING(SS)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR,750-OHM,25W
R2	304A192	1	RESISTOR, 3-OHM, 10 W
S1	308P88	1	SWITCH-AUTO MANUAL
T1	315A241	1	TRANS. ASSY-CURRENT
TB1	332A699	1	BLOCK-TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL-GROUND
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1B15	1	SILK SCREEN
	98A1928	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER-TRIM
	815-17B	1	SCREW-HEX HD #10-32X5/8LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE-CONTROL

660L19

15.0HA-22/12B

NOTE:

1-OPERATE WITH NEGATIVE GROUND ONLY

(B) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

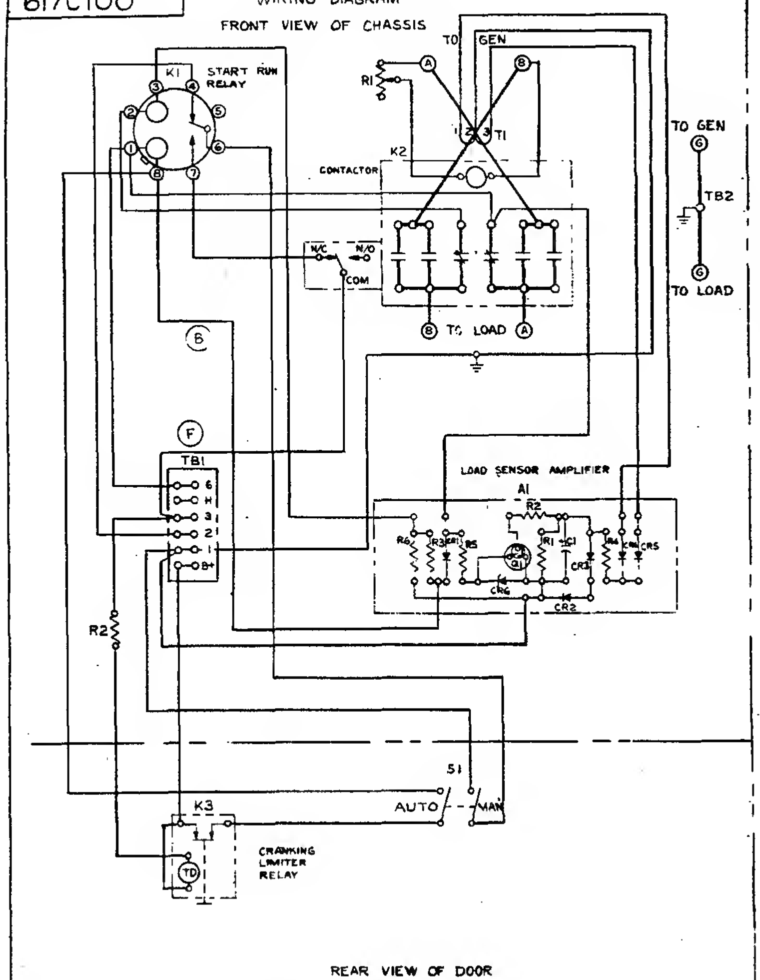
REVISION			
D	MAS 323P52 SOCKET	JV	11-9-67
C	" "	JV	11-9-67
B	ADDED NOTES 2 & 3	JV	11-1-67
A	ADDED LABEL 98A2045	JV	11-1-67
	SUPERSEDES DWG SAME AS DATED 5-23-66		

Onan DIVISION OF STUDEBAKER CORPORATION

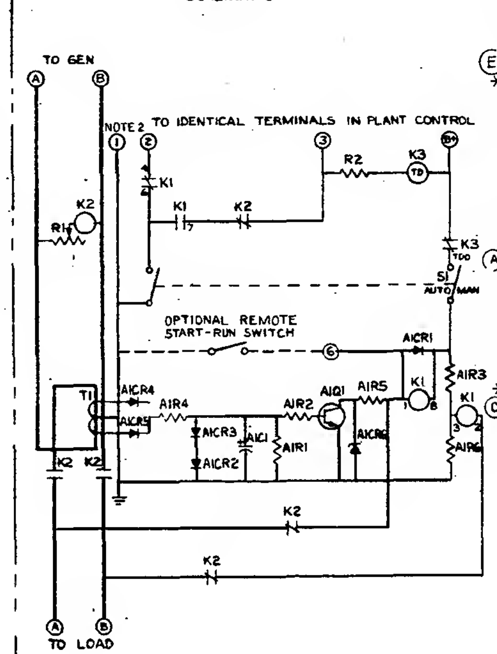
DWG NO 15.0HA-22/12B	DATE 11-7-67	BY CER	CKD WJB
12 VOLT CRANKING	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL		
240V., 1PH., 2W., 50/60CY.	DWG NO 617C99		

617C100

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
	38A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	36A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	650-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL

617C100

15.0HA-23/1B

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

LTR	REVISION	CKD	DATE
F	REV. WIRING TERMINAL 6	JV	1-24-68
E	WAS 323P52	JV	1-9-67
D	ADDED NOTES 2 & 3	JV	11-1-67
C	ADDED LABEL 98A2045	JV	11-1-67
B	WAS CONNECTED TO S1	JV	9-29-67
A	WAS 304A15C	JV	12-7-66

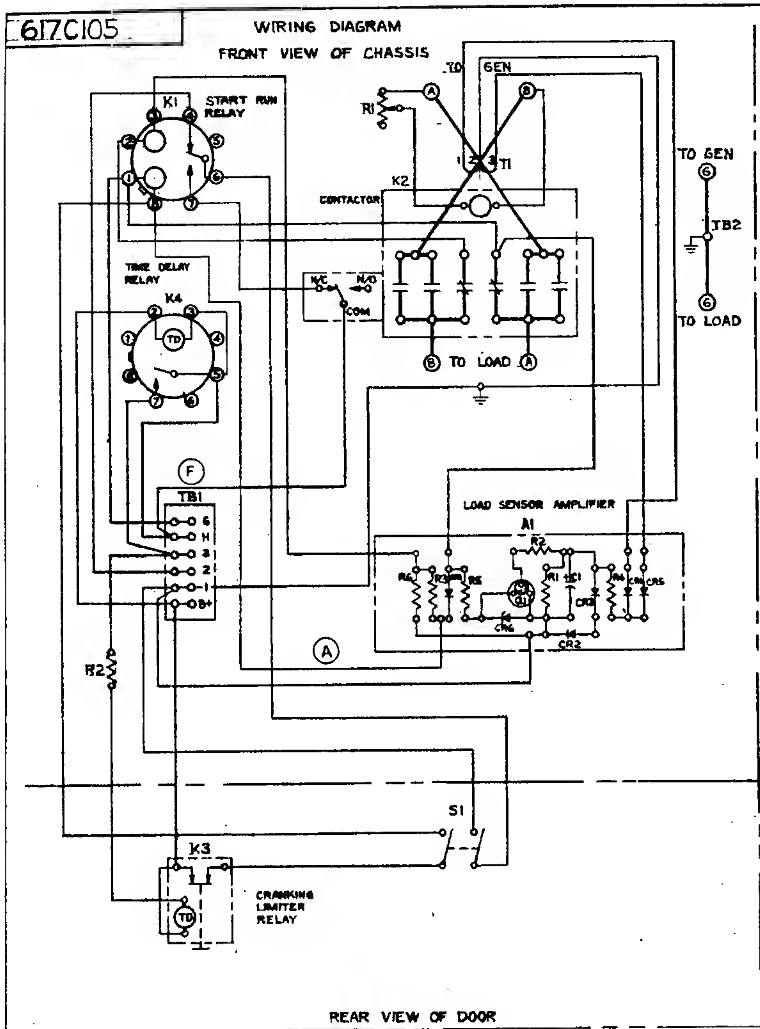
Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 15.0HA-23/1B	DATE 11-19-66 · DR CDR · CKD JIM VINT WJB
12 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
120/240V., 1PH., 3W., 50/60CY	DWG NO 617C100

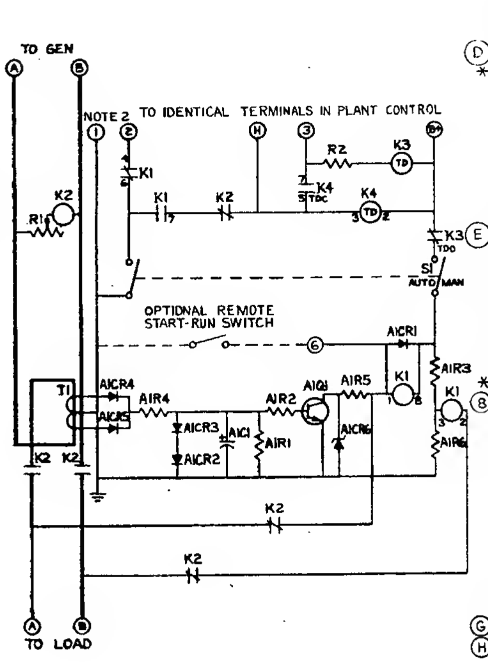
617C105

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A645	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
	334A1890	25FT	WIRE - FLEXIBLE NO. 20 AWG
	334A1842	12FT	WIRE - FLEXIBLE NO. 16 AWG

617C105

15.0HA-23/10B

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

(C) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

LTR	REVISION	CKR	DATE
H	ADDED WIRE NO. 334A1842	JV	3-14-69
G	ADDED WIRE NO. 334A1890	JV	3-14-69
F	REV. WIRING TERMINAL 6	JV	1-24-68
E	WAS 323P52 SOCKET	JV	11-9-67
D	" " "	JV	11-9-67
C	ADDED NOTES 2 & 3	JV	11-1-67
B	ADDED LABEL 98A2045	JV	11-1-67
A	MOVED LEAD S1 TO K1	JV	7-25-67

Onan DIVISION OF STUDEBAKER CORPORATION Minneapolis, Minnesota

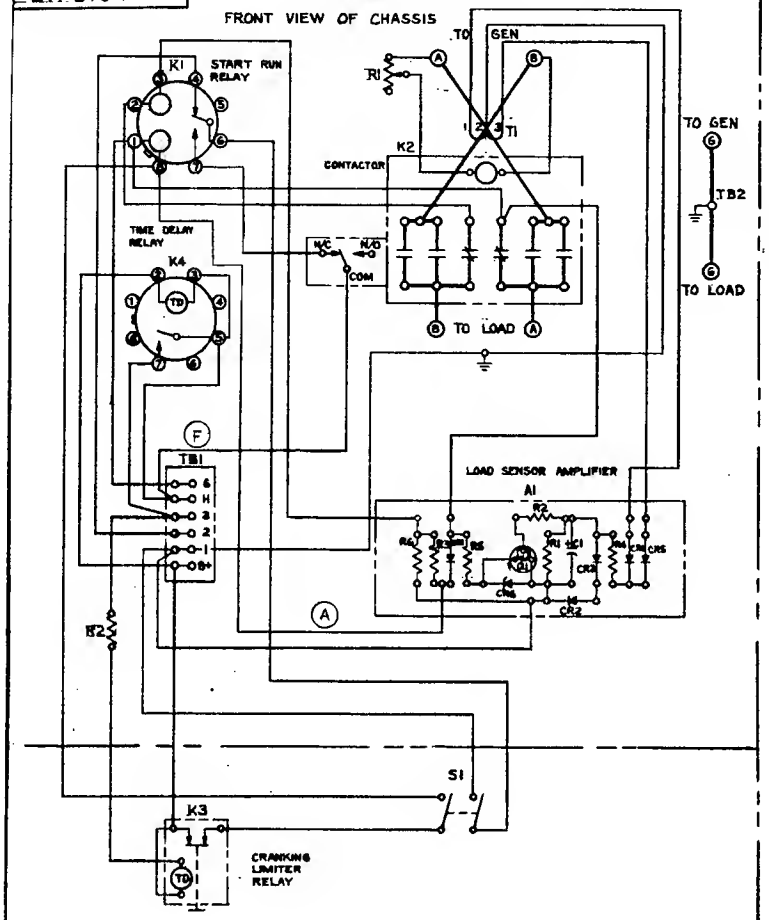
MODEL NO 15.0HA-23/10B
12 VOLT CRANKING
120/240 V., 1 PH., 3 WIRE, 50, 60 CY.

DATE 12-29-66 DR. CDR CKR JIM VINT WJB
NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
DWG. NO. 617C105

617C104

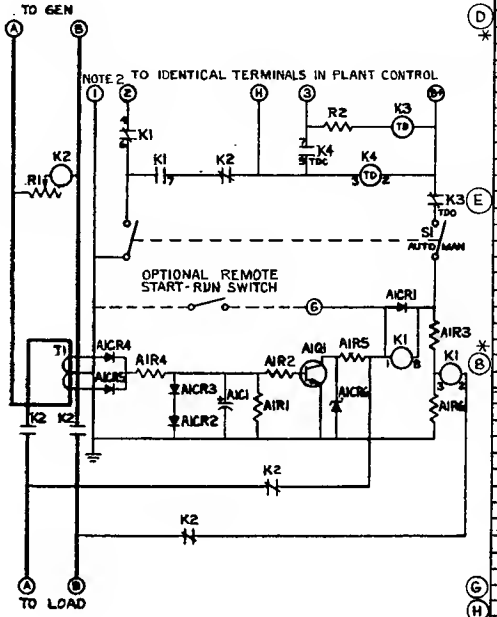
WIRING DIAGRAM

FRONT VIEW OF CHASSIS



REAR VIEW OF DOOR

SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
AI.	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (858-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 SEC)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	306P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C104
	334A1890	25 FT	WIRE-FLEXIBLE NO. 20 AWG
	334A1842	12 FT	WIRE-FLEXIBLE NO. 16 AWG

15.0HA-23/12B

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

(C) 2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

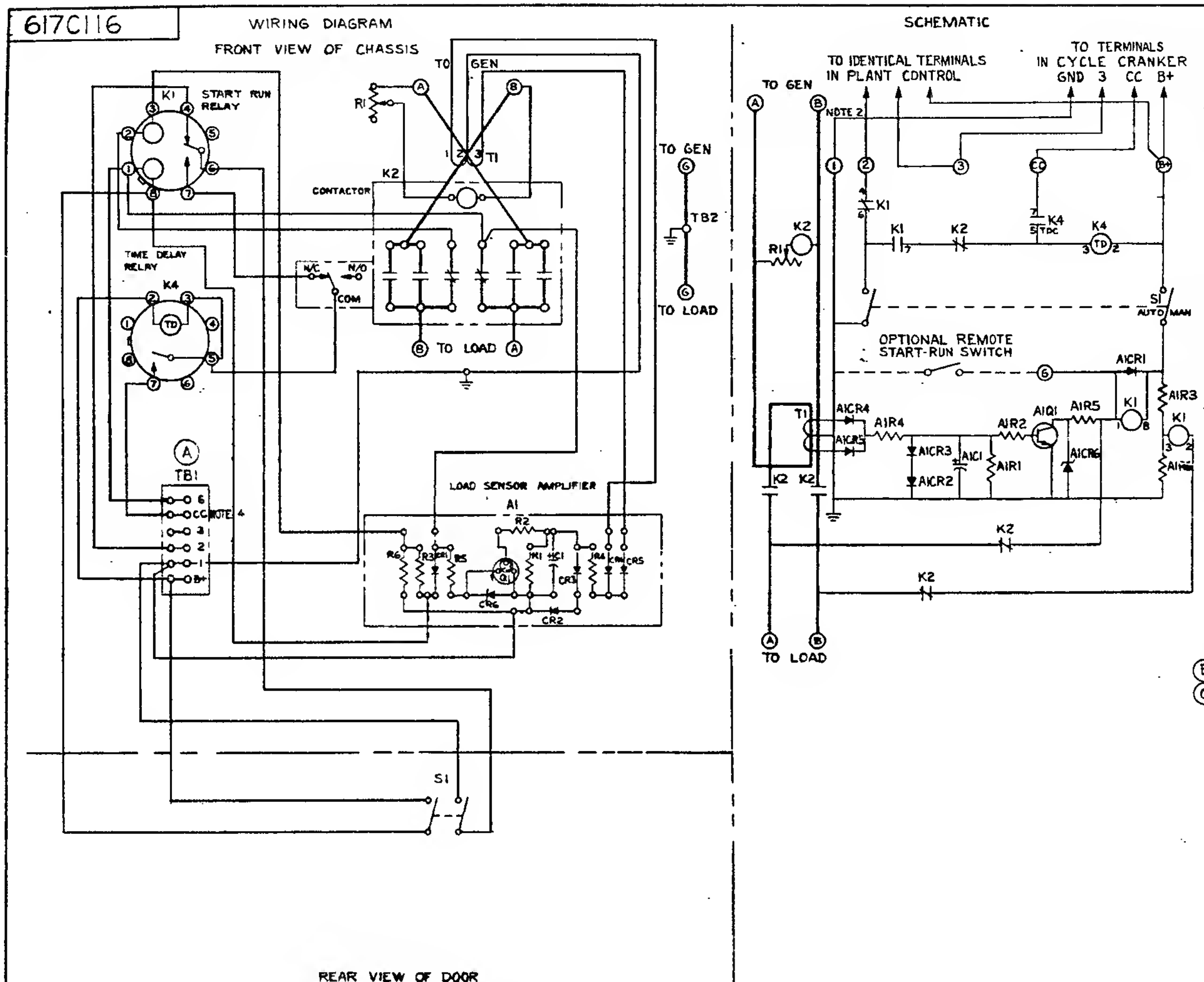
NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

LTR	REVISION	CHK	DATE
H	ADDED WIRE NO. 334A1842	JV	3-14-69
G	ADDED WIRE NO. 334A1890	JV	3-14-69
F	REV. WIRING TERMINAL 6	JV	1-24-68
E	WAS 323P52 SOCKET	JV	11-9-67
D	" " "	JV	11-9-67
C	ADDED NOTES 2 & 3	JV	11-1-67
B	ADDED LABEL 98A2045	JV	11-1-67
A	MOVED LEAD S1 TO K1	JV	7-25-67

Onan DIVISION OF STUDEBAKER CORPORATION Minneapolis, Minnesota

MODEL NO.	15.0 HA-23/12B	DATE	12-29-66
	12 VOLT CRANKING	DR.	CDR
	120/240 V., 1 PH., 3 WIRE, 50/60 CY.	CHK.	JIM VINT WJB
NAME	SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL		
DWG. NO.	617C104		

617C116



REF.DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR *
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
	98A2045	1	CAUTION LABEL *
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN (NOTE 6)
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
	517-12	1	DOT BUTTON
	517-43	2	DOT BUTTON
(B)	334A1890	25 FT	WIRE - FLEXIBLE
(C)	334A1842	12 FT	WIRE - FLEXIBLE

617C116

15.0HA-23/15B

7. USE WITH TYPE III CYCLE CRANKER W.D. 625B224
6. ON SILKSCREEN 98C1815, PAINT GREEN OVER "CRANKING LIMITER" & "RESET AFTER 1 MINUTE"
5. PASTE PRINT OF SCHEMATIC INSIDE COVER OF CONTROL BOX
4. BESIDE TB1, STAMP CC IN PLACE OF H
3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

NOTE:
UNLESS OTHERWISE NOTED, ALL COMPONENTS ARE SHOWN IN THE DE-ENERGIZED POSITION.

LET	REVISION	CKR	DATE
C	ADDED ... PER ENG. 334A1842		3-14-?9
B	[illegible]		[illegible]
A	REV. WIRING TERMINAL 6		1-24-69

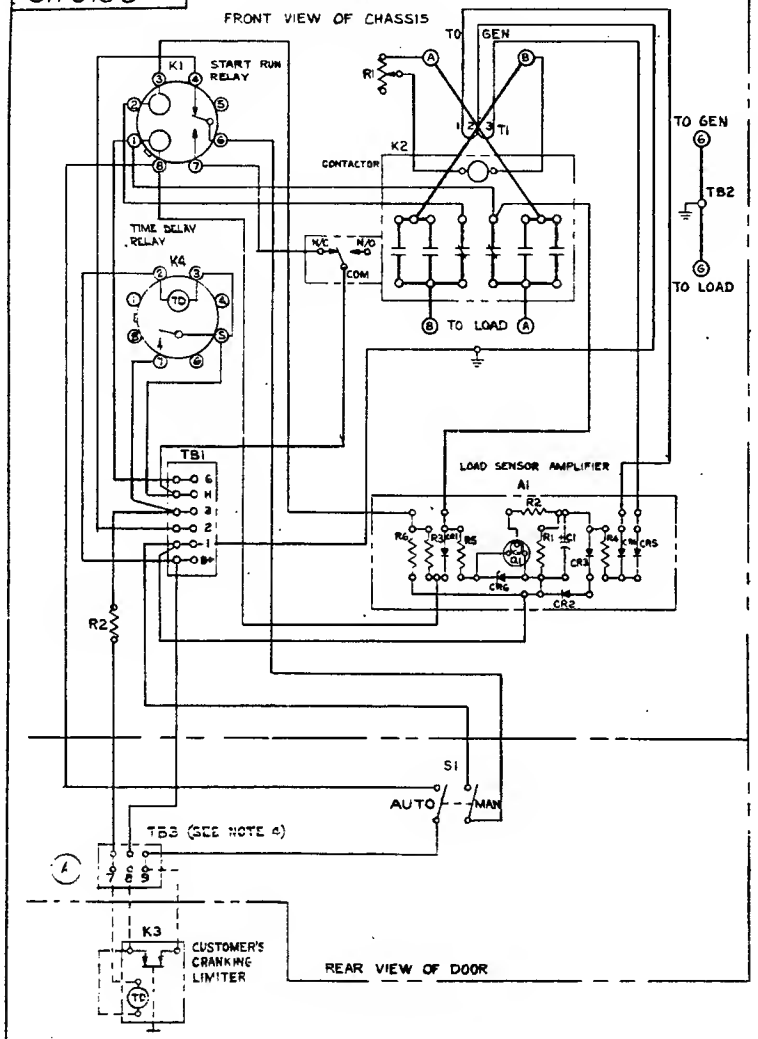
Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO 15.0HA-23/15B	DATE 11-17-67 BY CDR
12 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL
120/240 V., 1 PH., 3 WIRE, 50/60 CY.	DWG NO 617C116

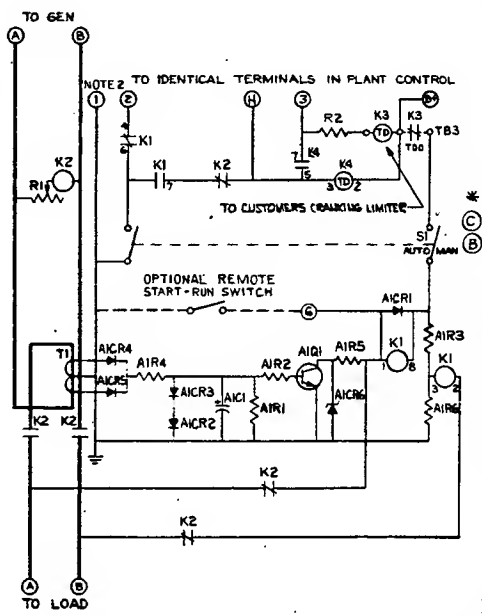
6I7C130

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST			
REF.DES.	PART NO.	QTY	DESCRIPTION
A1,	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
	98A2045	1	CAUTION LABEL
K3	320B104 (REF)	1	RELAY - CRANKING LIMITER
R1	304A131	1	RESISTOR 750 OHM, 25 W
R2	304A192	1*	RESISTOR, 3 OHM, 10 W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
TB3	332A611	1	BLOCK - TERMINAL
	332A612	1	STRIP - MARKER (SEE NOTE 4)
	301D2573	1	CONTROL BOX (MODIFY)
	9861815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	BSD-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTRDL
			6I7C130
	334A1890	2.5 FT	WIRE - FLEXIBLE NO. 20 AWG
	334A1842	12 FT	WIRE - FLEXIBLE NO. 16 AWG
K4	307A645	1	RELAY - TIME DELAY, PREHEAT (SDS)
	323P380	1	SOCKET

4. PAINT BACK OF MARKER STRIP WHITE, BEFORE MTG IT IN BOX

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

15.0HA-23/17B

LTR	REVISION	BY	DATE
E	323P380 ADDED	[illegible]	2-6-70
D	K4(307A645) ADDED	[illegible]	2-6-70
C	52 [illegible]	[illegible]	3-2-69
B	REMOVED R3-350-984	[illegible]	9-10-69
A	ADDED TERM MARKINGS ON TB3	GT	9-8-69

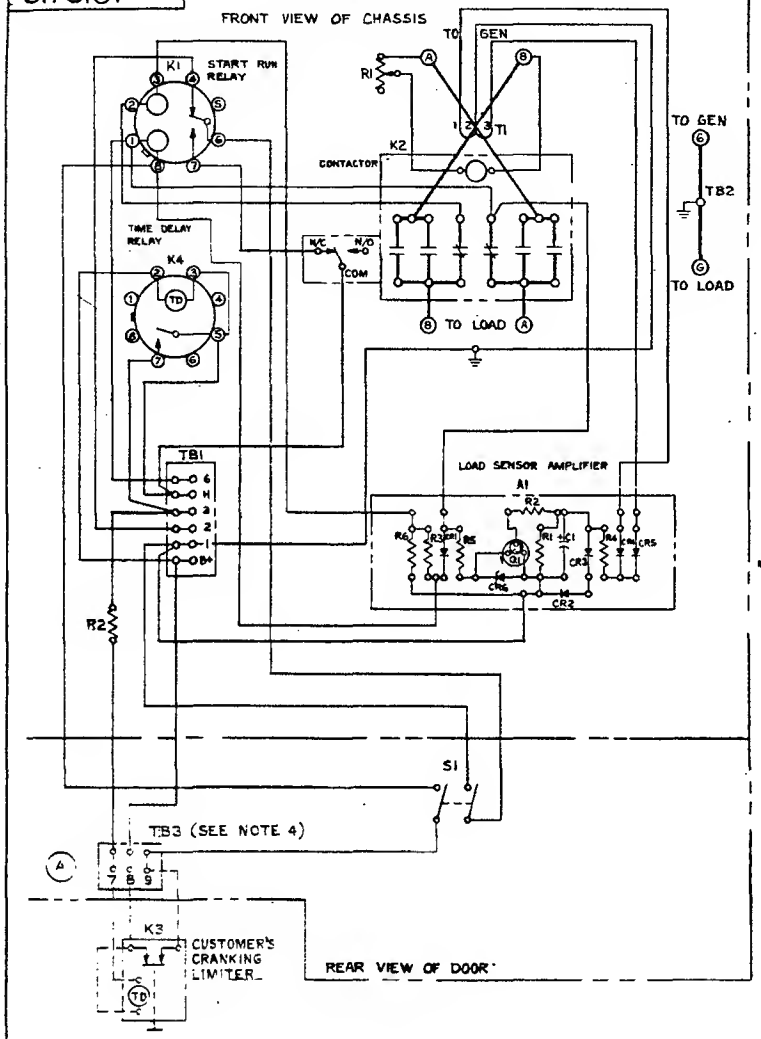
Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO. 15.0HA-23/17B	DATE 7-2-69	BY CDR
12 VOLT CRANKING	WIRING DIAGRAM CONTROL - AUTOMATIC DEMAND	
120/240V., 1PH., 3W., 50/60CY	DWG NO. 6I7C130	

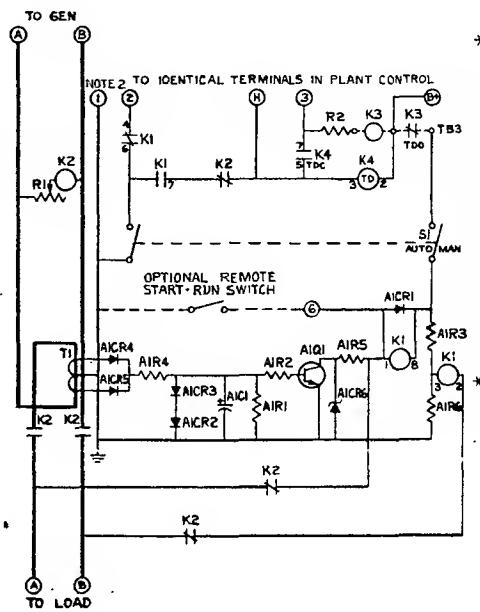
617C131

WIRING DIAGRAM

FRONT VIEW OF CHASSIS



SCHEMATIC



REF DES	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
* K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (858-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104(REF)	1	RELAY - CRANKING LIMITER
K4	307A689	1	RELAY - TIME DELAY, PREHEAT (5 S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A192	1	RESISTOR, 3 OHM, 10W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
TB3	332A611	1	BLOCK-TERMINAL
	332A612	1	STRIP - MARKER (SEE NOTE 4)
*	98A2C45	1	CAUTION LABEL
	301D2573	1	CONTROL BOX (MODIFY)
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	#15-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C131
	334A1890	2.5 FT	WIRE-FLEXIBLE NO 20 AWG
	334A1842	12 FT	WIRE-FLEXIBLE NO 16 AWG

4. PAINT BACK OF MARKER STRIP WHITE, BEFORE MTG IT IN BOX

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2). THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN. BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: 1 - OPERATE WITH NEGATIVE GROUND ONLY

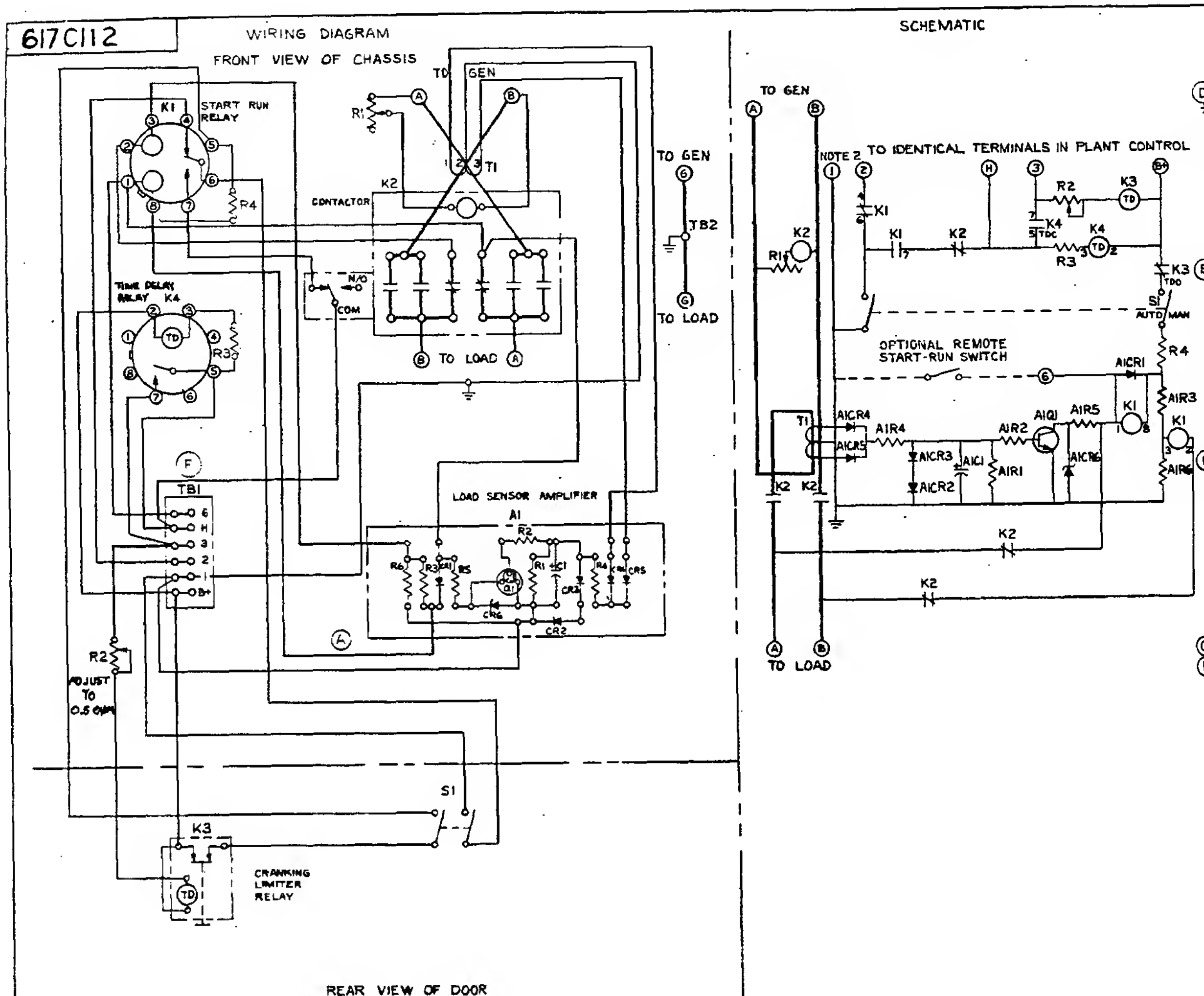
15.0HA-23/18B

LET	REVISION	CHK	DATE
A	ADDED TERM MARKINGS ON TB3	GF	9-2-69

Onan — DIVISION OF STUDEBAKER CORPORATION

MODEL NO 15.0 HA-23/18B	DATE 7-8-69	BY COR
12 VOLT CRANKING	NAME WIRING DIAGRAM CONTROL-AUTOMATIC DEMAND	CHK G.F.T.
120/240 V., 1PH., 3 WIRE, 50/60 CY.	DWG. NO 617C131	

617C112



PARTS LIST

REF.DES.	PART NO.	QTY	DESCRIPTION
A1	300B463	1	AMPLIFIER ASSY - LOAD SENSOR
	332A932	1	BOARD - INSULATING
K1	307A858	1	RELAY - START RUN
	323P380	1	SOCKET
K2	307C667	1	CONTACTOR
	307A685	4	JUMPER
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1 3/4" OF (898-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH - AUX
	309A193	1	INSULATOR
K3	320B104	1	RELAY - CRANKING LIMITER
K4	307A879	1	RELAY - TIME DELAY, PREHEAT (20S)
	323P380	1	SOCKET
R1	304A131	1	RESISTOR, 750 OHM, 25W
R2	304A222	1	RESISTOR, .5 OHM, 50W
S1	308P88	1	SWITCH - AUTO MANUAL
T1	315A233	1	TRANS. ASSY - CURRENT
TB1	332A699	1	BLOCK - TERMINAL
	98A1927	1	SILK SCREEN
TB2	332-142	2	TERMINAL - GROUND
R3	350-520	1	RESISTOR, 47 OHM, 1/2 W
R4	350-964	1	RESISTOR, 750 OHM, 2 W
	98A2045	1	CAUTION LABEL
	301D2573	1	CONTROL BOX
	98C1815	1	SILK SCREEN
	98A1949	1	SILK SCREEN
	301B2586	1	TRIM
	518P237	3	FASTENER - TRIM
	815-178	1	SCREW - HEX HD #10-32 X 5/8 LG
	850-30	1	LOCKWASHER #10
	99A966	1	NAMEPLATE - CONTROL
			617C112
(G)	334A1890	2.5FT	WIRE-FLEXIBLE NO. 20 AWG
(H)	334A1842	1/2 FT	WIRE-FLEXIBLE NO. 16 AWG

15.0HA-23-4/10B

LTR	REVISION	CKD	DATE
H	ADDED WIRE NO. 334-1842		3-4-69
G	ADDED WIRE NO. 334-A1890		
F	REV. WIRING TERMINAL 6		11-24-68
E	WAS 323P52 SOCKET		1-9-67
D	" " "		1-9-67
C	ADDED NOTES 2 & 3		1-67
B	[illegible]		1-67
A	[illegible]		

Onan DIVISION OF STUDEBAKER CORPORATION

MODEL NO 15.0HA-23-4/10B	DATE 2-1-67	DR CDR
32 VOLT CRANKING	NAME SCHEMATIC & WIRING DIAGRAM AUTOMATIC DEMAND CONTROL	
120/240 V., 1 PH., 3 WIRE, 50/60 CY.	DWG NO 617C112	

3. CAUTION - IF GEN IS CONNECTED TO LOAD TERMINALS OF CONTACTOR (K2), THE AC OUTPUT VOLTAGE WILL DESTROY THE LOAD SENSOR AMPLIFIER.

2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN, BECAUSE GENERATOR AND CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

NOTE: - OPERATE WITH NEGATIVE GROUND ONLY

INDEX
FOR
SPEC C CONTROLS

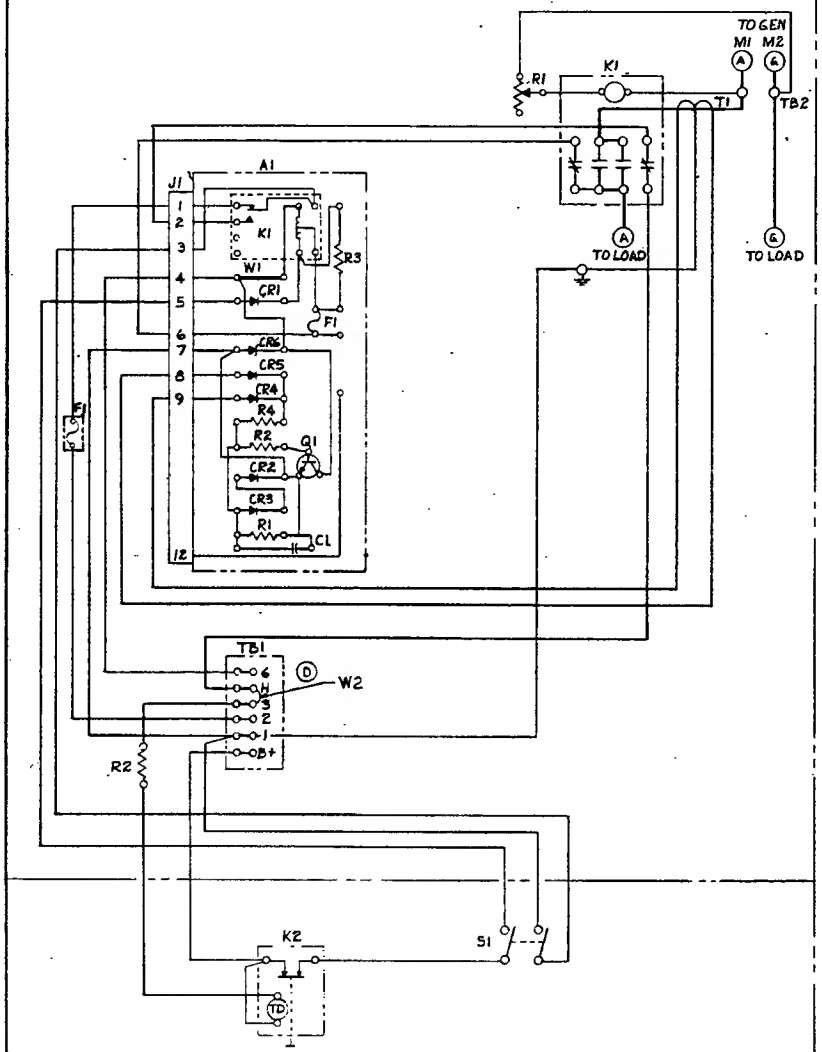
Find the appropriate model and proceed to the indicated page for the wiring diagram.

PRINTED CIRCUIT BOARDS

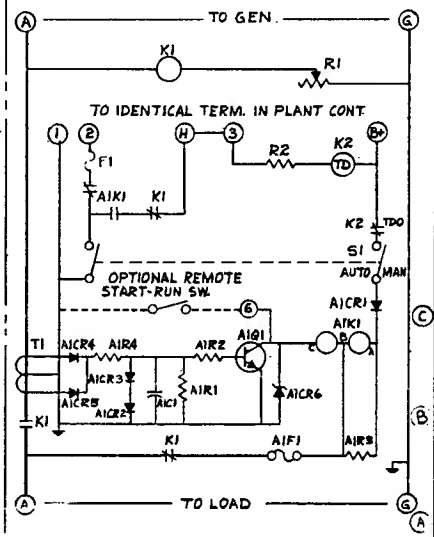
Individual components of the printed circuit boards are given on pages 73 and 74.

617C132

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU THE AC GROUND LEAD.

PARTS LIST

REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B740	1	CONTROL-LOAD SENSOR
	301A328D	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	160A144	1	JUMPER
K2	320B104	1	RELAY-CRANKING LIMITER
R1	304A679	1	RESISTOR ASSY
	304A282 (REF)	1	RESISTOR-300 OHM, 25 W
R2	304A192 (REF)	1	RESISTOR-3 OHM, 10 W
S1	308P88 (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699 (REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C546	1	WIRING HARNESS
W2	332A592	1	JUMPER
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2239	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	99A9GB	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100 (REF)	1	BLOCK-FUSE

617C132

7.5HA-21/1C

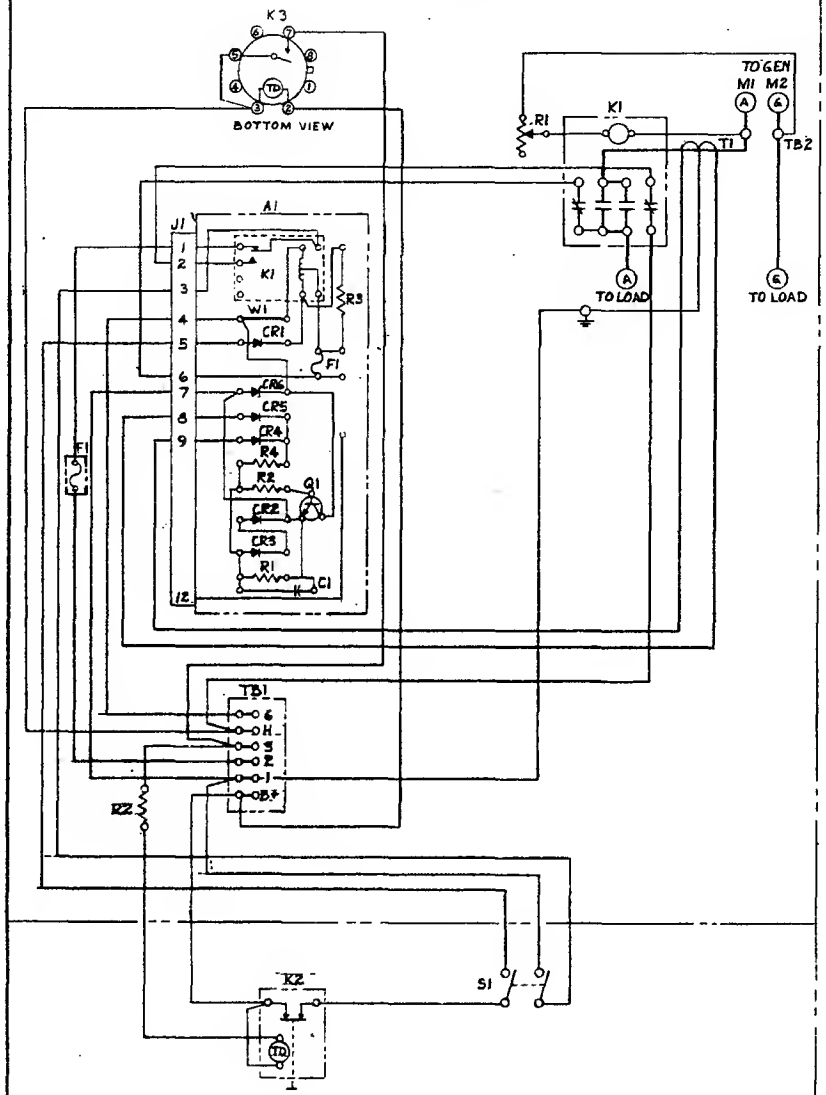
REV	REVISION	BY	DATE
D	REVISED WIRING ON TB1	JV	8-3-70
C	ADDED 33A592 (W2)	JV	8-3-70
B	TRIM WAS 301B2586	WB	
A	ADDED (REF)	JV	5-8-70
A	ADDED 321P153 & 321-100	JV	4-15-70

Onan — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minnesota

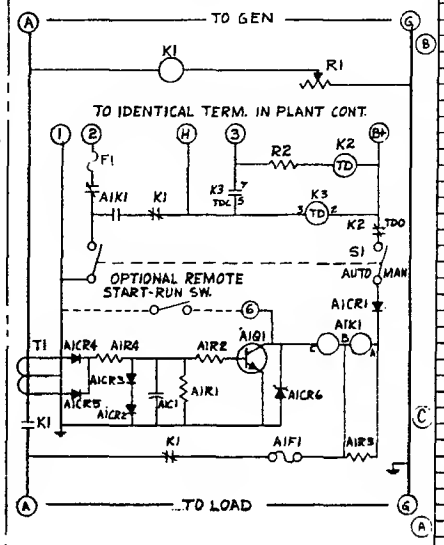
-01	MODEL NO. 7.5HA-21/1C 12V CRANKING	DATE 2-16-70	BY WKR
	120V 1PH 2W 50/60 CY	TITLE WIRING DIAGRAM CONTROL-AUTO DEMAND	DWG NO. 617C132

617C133

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

PARTS LIST

REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B740	1	CONTROL-LOAD SENSOR
	301A3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	160A144	1	JUMPER
K2	320B104	1	RELAY-CRANKING LIMITER
K3	307A645(01)	1	RELAY-TIME DELAY (20 SEC)
	307A689(02)	1	RELAY-TIME DELAY (5 SEC)
	323A775	1	SOCKET ASSY
R1	304A679	1	RESISTOR ASSY
	304A282 (REF)	1	RESISTOR-300 OHM. 25 W
R2	304A192(REF)	1	RESISTOR-3 OHM 10 W
S1	308P88 (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699 (REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C546	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2239	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

617C133

7.5HA-21/10C

7.5HA-21/12C

C	TRIM WAS 30182586	KB	JV 7-24-70
B	WAS 307C666	JD	JV 5-21-70
A	ADDED (REF)	LD	JV 5-8-70
REV	ADDED 321P153 & 321-100	JD	JV 4-16-70
	REVISION		

Onan DIVISION OF STUDEBAKER CORPORATION

12V CRANKING

MODEL NO.	
-01	7.5HA-21/10C
-02	7.5HA-21/12C

120V 1PH 2W 50/60CY

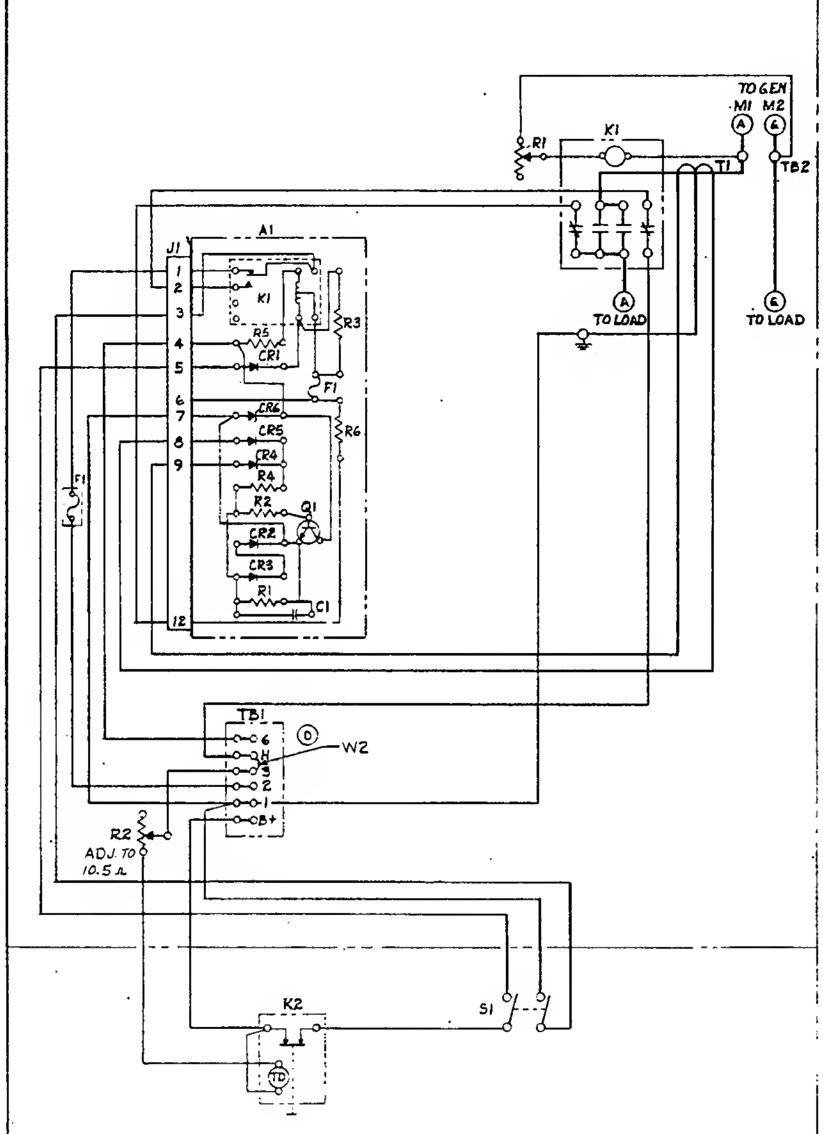
DATE 2-16-70 BY WKR

NAME WIRING DIAGRAM
CONTROL-AUTO DEMAND

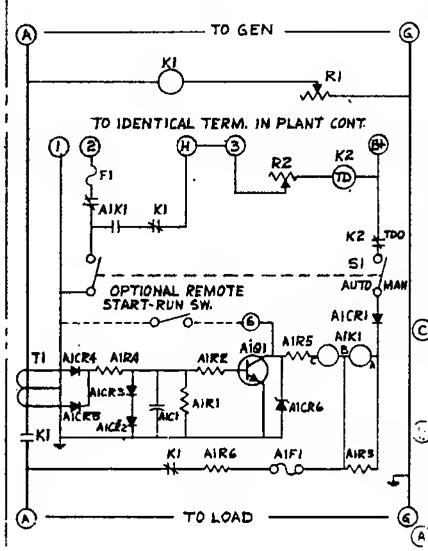
DWG. NO. 617C133

617C138

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B743	1	CONTROL-LOAD SENSOR
	301A3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	160A144	1	JUMPER
K2	320B104	1	RELAY-CRANKING LIMITER
R1	304A679	1	RESISTOR ASSY
	304A282(REF)	1	RESISTOR-300 OHM. 25 W
R2	304A222	1	RESISTOR-15 OHM. 50 W
S1	308P88 (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699 (REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C548	1	WIRING HARNESS
W2	332A592	1	JUMPER
	301C3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2240	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237		FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

617C138

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

7.5HA-21-4/1C

D	REVISED WIRING ON TB1	WB	8-3-70
C	ADDED 332A592 (W2)	WB	6-3-70
B	TRIM ASS 301B2586	WB	7-24-70
A	ADDED (REF)	JD	5-8-70
A	ADDED 321P153 & 321-100	JD	4-14-70

Onan — DIVISION OF STUDEBAKER CORPORATION

-01 | 7.5 HA-21-4/1C | 32V CRANKING | 120V 1PH 2W 50/60 CY

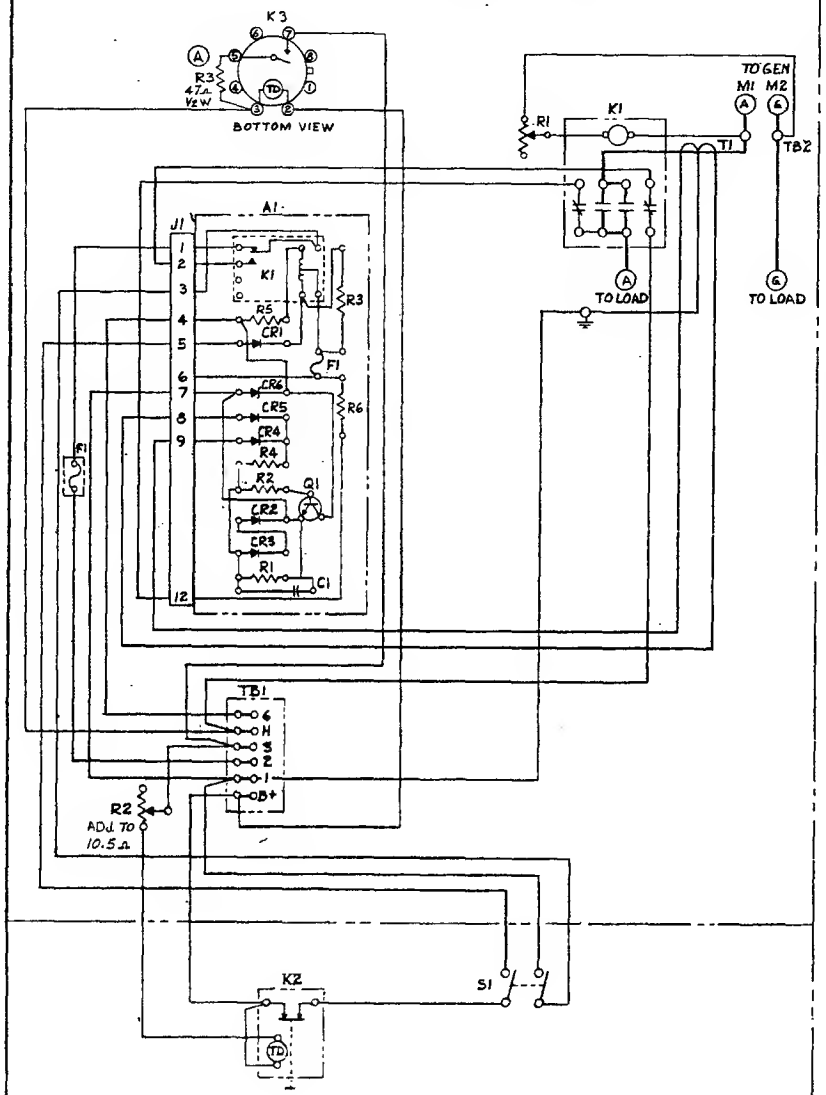
DATE 2-16-70 | WKR | W.B.

WIRING DIAGRAM
CONTROL-AUTO DEMAND

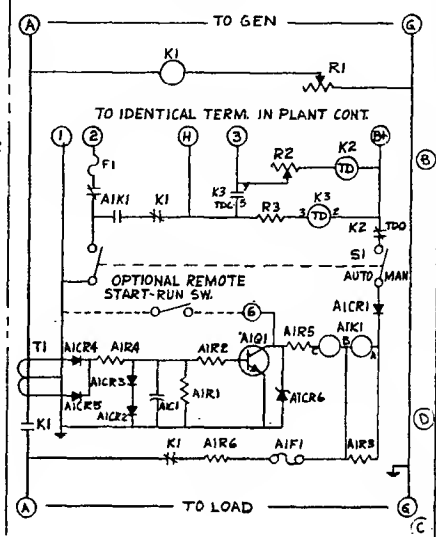
617C138

617C139

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

PARTS LIST

REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B743	1	CONTROL-LOAD SENSOR
	301A3280	2	BRACKET-MOUNTING
	51BA295	2	FASTENER-SNAP IN
K1	307C665	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	160A144	1	JUMPER
M2	320B104	1	RELAY-CRANKING LIMITER
K3	307A879 (01)	1	RELAY-TIME DELAY (20 SEC)
	307A877 (02)	1	RELAY-TIME DELAY (5 SEC)
	323A773	1	SOCKET ASSY
R1	304A679	1	RESISTOR ASSY
	304A282 (REF)	1	RESISTOR-300 OHM, 25 W
R2	304A222	1	RESISTOR-15 OHM, 50 W
S1	308P88 (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699 (REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	330C548	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2240	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100 (REF)	1	BLOCK-FUSE

617C139

7.5HA-21-4/10C

7.5HA-21-4/12C

REV	REVISION	BY	CHKD	DATE
D	TRIM WAS 301B2586	WB	JV	7-24-70
C	ADDED (REF.)	JD	JV	5-8-70
C	ADDED 321P153 & 321-100	JD	JV	4-16-70
B	323A773 WAS 332A773	WJB	JV	3-18-70
A	R3 WAS 62Ω, 2W	WJB	JV	3-13-70

32V CRANKING

	MODEL NO.
-01	7.5HA-21-4/10C
-02	7.5HA-21-4/12C

120V 1PH 2W 50/60 CY

Onan DIVISION OF STUDEBAKER CORPORATION

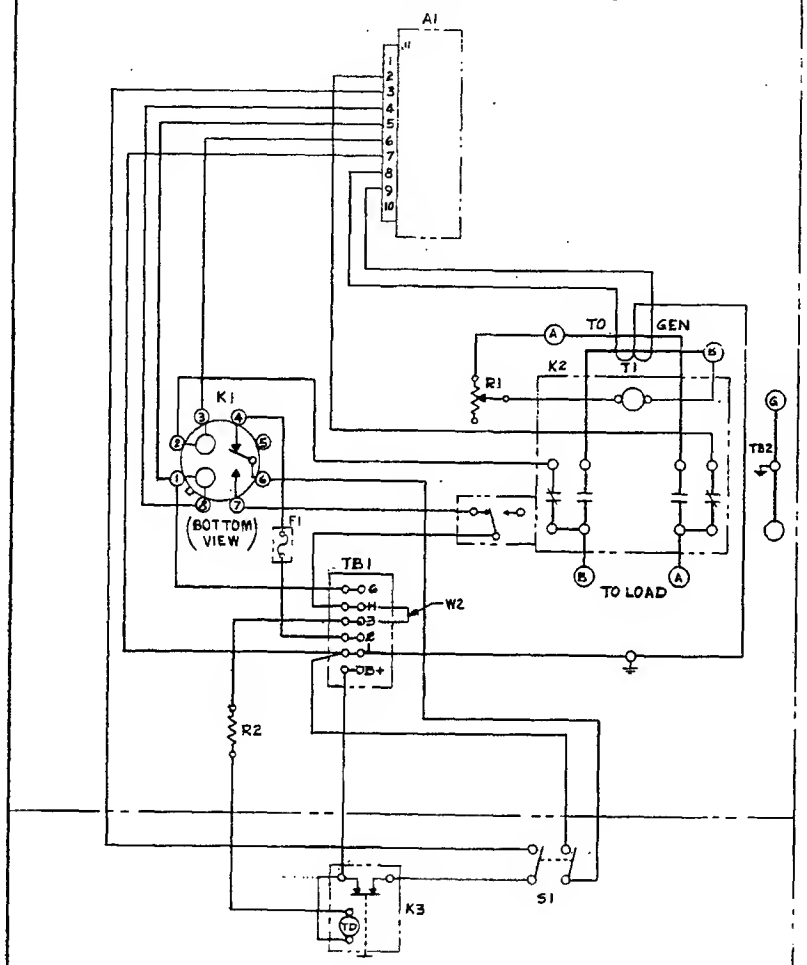
DATE 2-16-70 | BY WKR | ENGR Jim Vint | APPD WJB

WIRING DIAGRAM
CONTROL-AUTO DEMAND

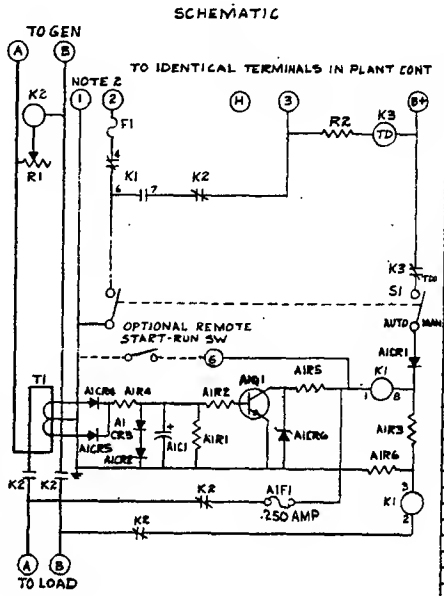
DWG NO. 617C139

617C140

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	301B3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307A858	1	RELAY-START RUN
K2	307C666	1	CONTACTOR
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A682	1	RESISTOR ASSY - 750 OHM, 25W
R2	304A192(REF)	1	RESISTOR-3 OHM 10W
S1	308P88(REF)	1	SWITCH-AUTO MANUAL
T1	315A345	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-517	2	TERMINAL-GROUND
W1	338C552	1	WIRING HARNESS
W2	332A592	1	JUMPER
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2252	1	SILKSCREEN-SCHEWATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
			617C140
F1	321P153	1	FUSE, 3 AMP
	321-100 (REF)	1	BLOCK-FUSE

7.5HA-23/1C

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

REV	REVISION	BY	CHK	DATE
B	REVERSE WIRES 2 & 3 ON K1	JD	JV	10-21-70
A	ADDED (REF)	JD	JV	5-8-70
A	ADDED 321P153 & 321-100	JD	JV	4-14-70

12V CRANKING

	MODEL NO.	
-01	7.5HA-23/1C	

120/240V 1PH 3W 50/60 CY

Onan — DIVISION OF STUDEBAKER CORPORATION, MINNEAPOLIS 14, MINNESOTA

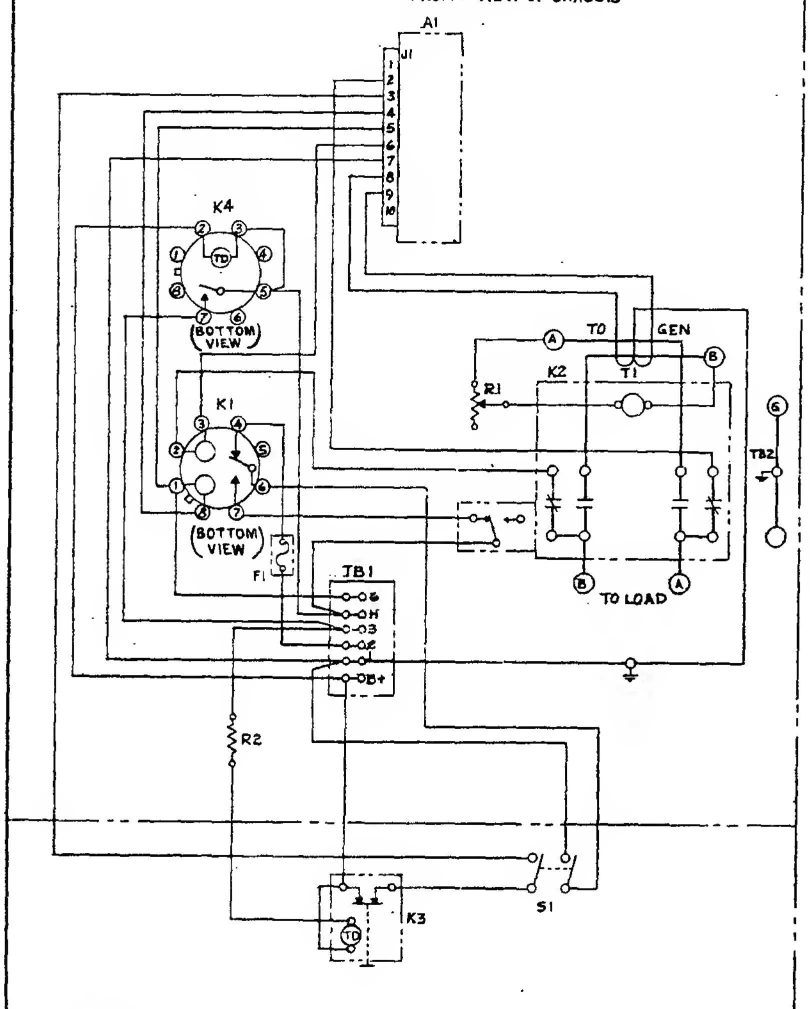
DATE 3-12-70 BY WKR CHK'D J.W.D.

NAME: WIRING DIAGRAM CONTROL-AUTO DEMAND

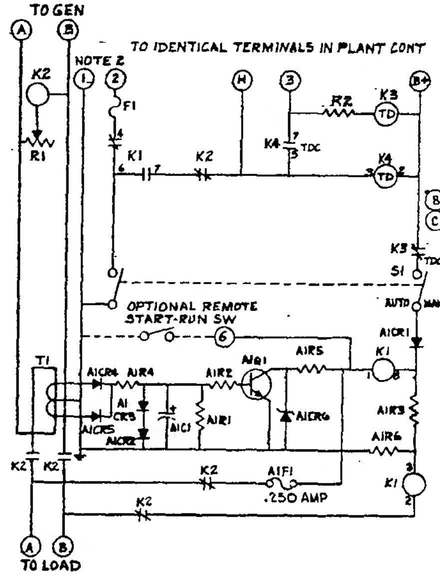
DWG. NO. 617C140

617C141

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	301B3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307A858	1	RELAY-START RUN
K2	307C666	1	CONTACTOR
	160-144	2	STRAP
	332-517	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645(-01)	1	RELAY-TIME DELAY (20 SEC)
	307A689(-02)	1	RELAY-TIME DELAY (5 SEC)
	323A775	1	SOCKET ASSY
R1	304A682	1	RESISTOR ASSY-750 OHM, 25W
R2	304A192(REF)	1	RESISTOR-3 OHM, 10W
S1	308P88(REF)	1	SWITCH-AUTO MANUAL
T1	315A345	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-517	2	TERMINAL-GROUND
W1	338C552	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2252	1	SILKSCREEN-SCHEMATIC
	301B3283	1	TRIM
	518P237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

617C141

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

7.5HA-23/10C

7.5HA-23/12C

LET	REVISION			DATE
D	REVERSE WIRES 2&3 ON K1	JD	JV	10-21-70
C	WAS 307A789	WB		8-26-70
C	WAS 307A971	JD	JV	5-12-70
B	WAS 307A879	JD	JV	5-12-70
A	ADDED (REF)	JD	JV	5-12-70
A	ADDED 321P153 & 321-100	JD		4-14-70

12V CRANKING

	MODEL NO.
-01	7.5HA-23/10C
-02	7.5HA-23/12C
	120/240V 1PH 3W 50/60CY

Onan DIVISION OF STUDEBAKER CORPORATION

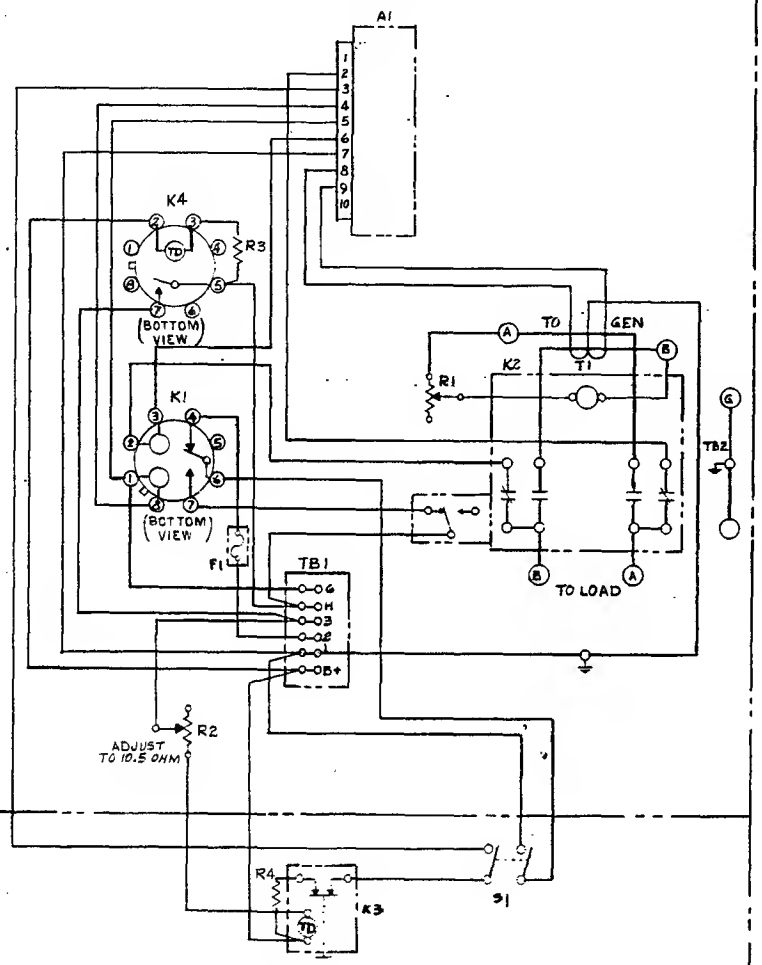
DATE 3-12-70 DR. WKR JKD

NAME (WIRING DIAGRAM) CONTROL-AUTO DEMAND

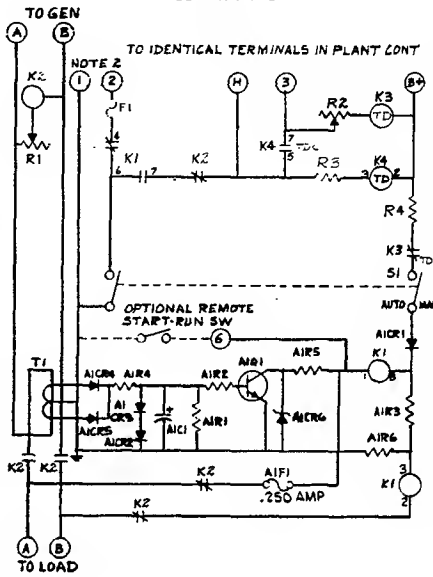
DWG. NO. 617C141

617C142

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY	DESCRIPTION
			PARTS LIST
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	301B3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307A858	1	RELAY-START RUN
K2	307C666	1	CONTACTOR
	160-144	2	STRAP
	352-517	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A879(-01)	1	RELAY-TIME DELAY (20 SEC)
	307A971(-02)	1	RELAY-TIME DELAY (5 SEC)
	323A773	1	SOCKET ASSY
R1	304A682	1	RESISTOR ASSY-750 OHM 25W
R2	304A222	1	RESISTOR-15 OHM 50W
R3	350-520(REF)	1	RESISTOR-47 OHM 1 2W
R4	350-984	1	RESISTOR-750 OHM 2W
S1	308PB8(REF)	1	SWITCH-AUTO MANUAL
T1	315A345	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C553	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1B15	1	SILKSCREEN
	98A2252	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	98A966	1	NAMEPLATE-CONTROL
			617C142
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD

7.5HA-23-4/10C

7.5HA-23-4/12C

B	REVERSE WIRES 2 & 3 ON K1	LS	10-21-70
A	NEED REF	JP	
	ADDED 321P153 & 321-100	JP	4-14-70

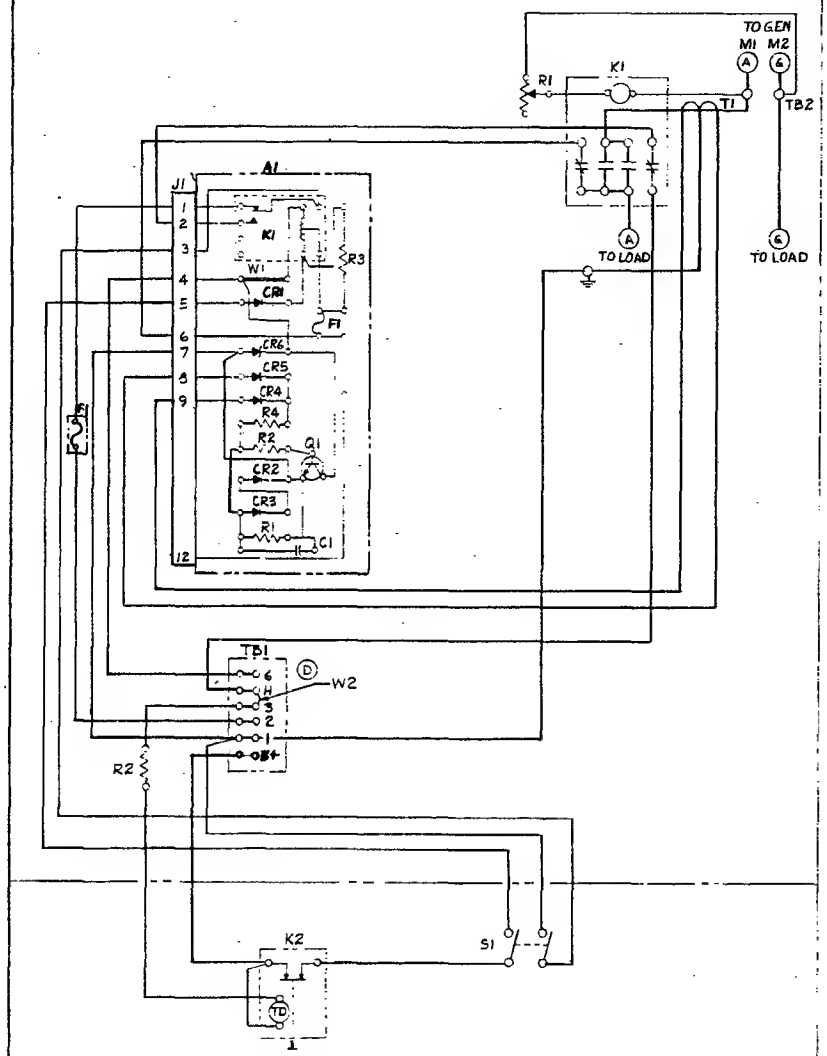
32VCRANKING

Onan

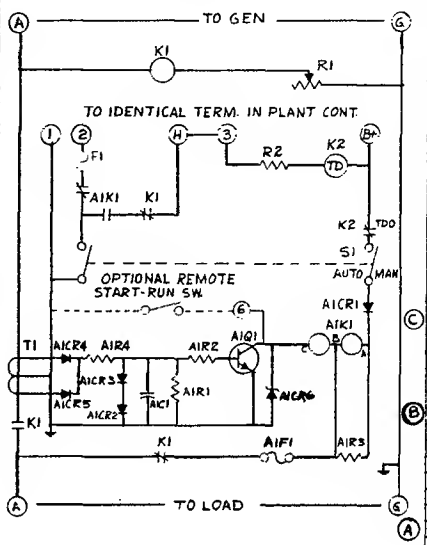
		3-12-70 WKR	DWD
-01	7.5HA-23-4/10C	WIRING DIAGRAM	
-02	7.5HA-23-4/12C	CONTROL-AUTO DEMAND	
	120/240V 1PH 3W 50/60CY	617C142	

617C134

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD

PARTS LIST

REF DES	PART NO	QTY	DESCRIPTION
A1	309B741	1	CONTROL-LOAD SENSOR
	301A328O	2	BRACKET-MOUNTING
	51BA295	2	FASTENER-SNAP IN
K1	307C666	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	160A144	1	JUMPER
K2	320B104	1	RELAY-CRANKING LIMITER
R1	304A6B2	1	RESISTOR ASSY
	304A131 (REF)	1	RESISTOR-750 OHM 25 W
R2	304A192 (REF)	1	RESISTOR-3 OHM 10 W
S1	308PBB (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699 (REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338O546	1	WIRING HARNESS
W2	332A592	1	JUMPER
	301U3273	1	CONTROL BOX
	9BC1815	1	SILKSCREEN
	9BA2239	1	SILKSCREEN-SCHEMATIC
	301B3273	1	TRIM
	516P237	5	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100 (REF)	1	BLOCK-FUSE

617C134

15.0HA-22/1C

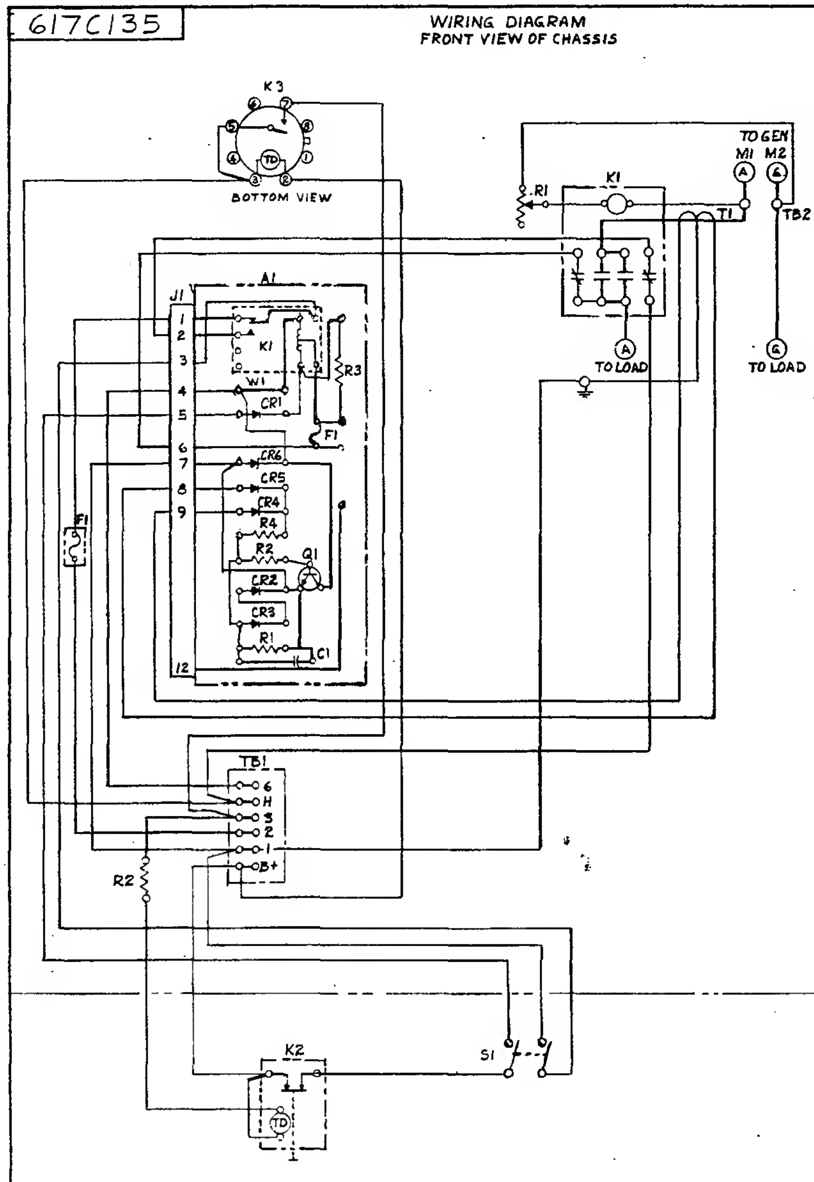
D	REVISED WIRING TB1		6-3-70
C	ADDED 332A592 (W2)		5-8-70
			4-9-70

Onan

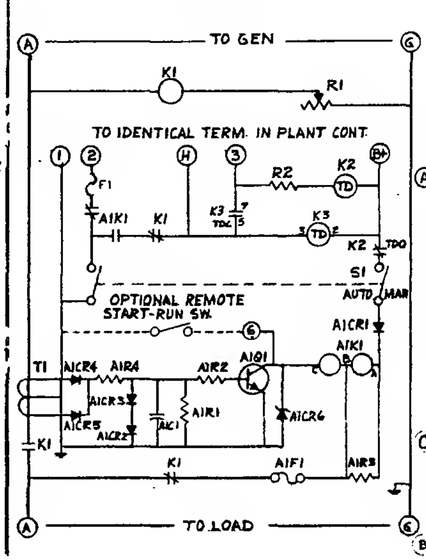
-01	15.0HA-22/1C 12V CRANKING	2-16-70	WKR
	240V 1PH 2W 50/60CY	WIRING DIAGRAM CONTROL-AUTO DEMAND	
		617C134	

617C135

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST

REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B741	1	CONTROL-LOAD SENSOR
	301A3280	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307C866	1	CONTACTOR
	332-142	2	TERMINAL
	307A685	2	JUMPER
	180A144	1	JUMPER
K2	320B104	1	RELAY-CRANKING LIMITER
K3	307A645(01)	1	RELAY-TIME DELAY (20 SEC)
	307A689(02)	1	RELAY-TIME DELAY (5 SEC)
	323A775	1	SOCKET ASSY
R1	304A682	1	RESISTOR ASSY
	304A131 (REF)	1	RESISTOR-750 OHM. 25 W.
R2	304A192(REF)	1	RESISTOR-3 OHM 10 W
S1	308P88 (REF)	1	SWITCH-AUTO MANUAL
T1	315A344	1	TRANSFORMER ASSY
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C546	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2239	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

617C135

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

15.0HA-22/10C

15.0HA-22/12C

C	TRIM WAS 301B2586		7-24-70
B	ADDED (REF)		5-8-70
B	ADDED 321-153 & 321-100		4-15-70
A	323A775 WAS 332A775		3-17-70

Onan DIVISION OF STUDEBAKER CORPORATION

12V CRANKING

-01 15.0HA-22/10C
-02 15.0HA-22/12C

240V 2W 1PH 50/60 CY

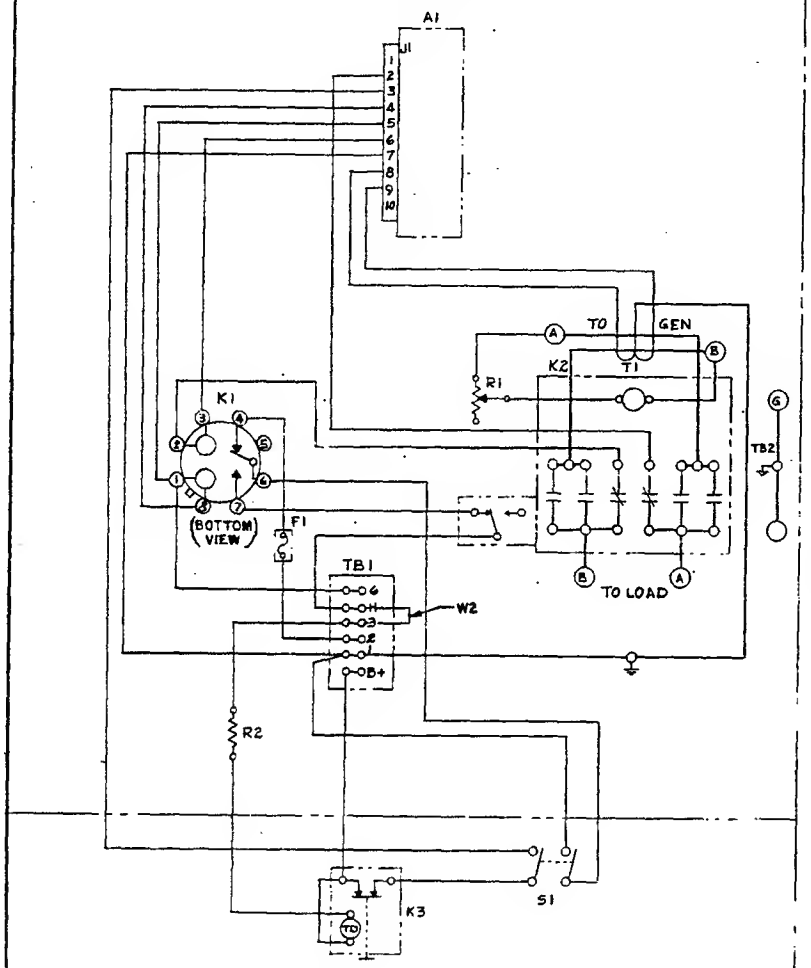
DATE 2-16-70 WKR

WIRING DIAGRAM
CONTROL-AUTO DEMAND

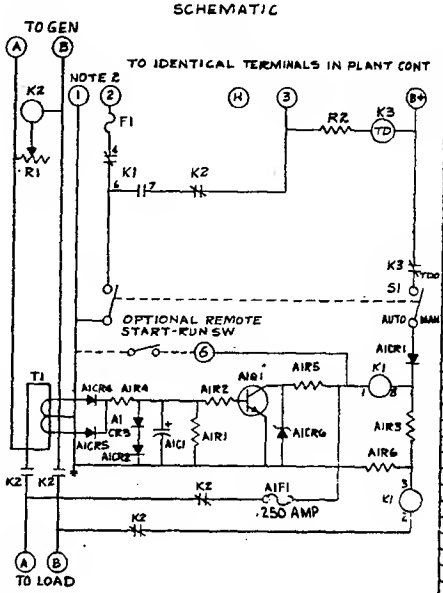
DWG NO 617C135

617C143

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



PARTS LIST			
REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	301B328D	2	BRACKET-MOUNTING
	51BA295	2	FASTENER-SNAP IN
K1	307A858	1	RELAY-START RUN
K2	307C667	1	CONTACTOR
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1-3/4" OF (BBB-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
	307A685	4	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
R1	304A682	1	RESISTOR ASSY-750 OHM, 25 W
R2	304A192(REF)	1	RESISTOR-3 OHM, 10 W
S1	308PB8(REF)	1	SWITCH-AUTO MANUAL
T1	315A346	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C552	1	WIRING HARNESS
W2	332A592	1	JUMPER
	301D3273	1	CONTROL BOX
	9BC1815	1	SILKSCREEN
	9BA2252	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	51BP237	3	FASTENER-TRIM
	99A966	1	NAMEPLATE-CONTROL
			617C143
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

15.0HA-23/1C

REV	REVISION	BY	CHK'D	DATE
B	REVERSE WIRES 2&3 ON K1	JD	JV	10-21-70
A	ADDED (REF)	JD	JV	5-8-70
A	ADDED 321P153 & 321-100	JD	JV	4-14-70

Onan DIVISION OF STUDEBAKER CORPORATION

12V CRANKING

MODEL NO.	
-01	15.0HA-23/1C

120/240V 1PH 3W 50/60 CY

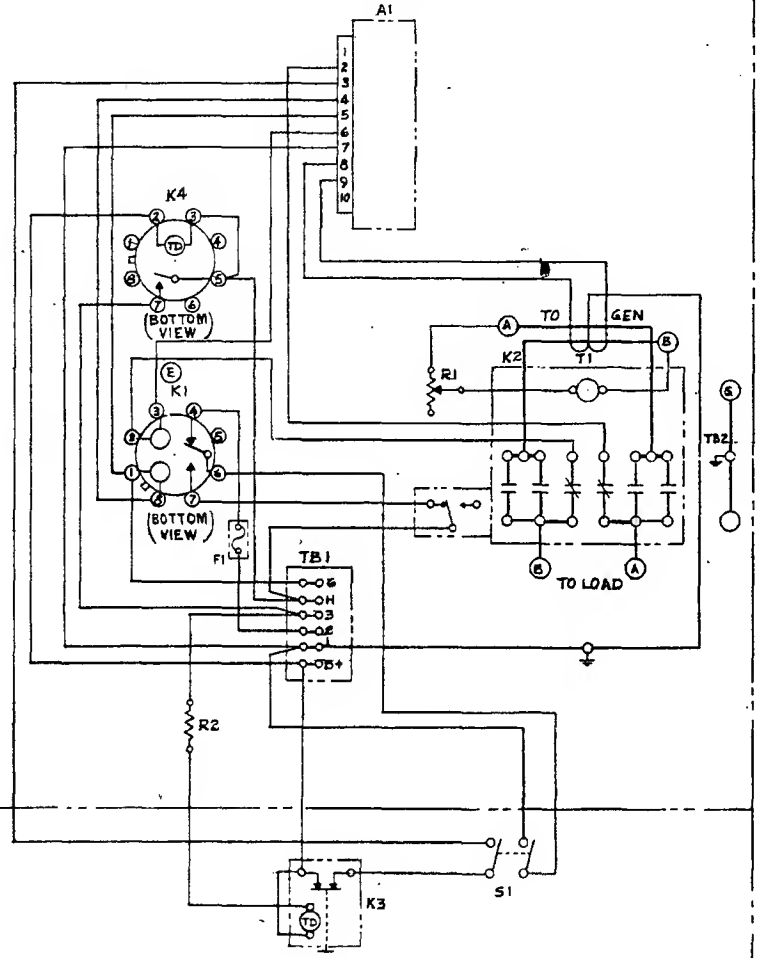
DATE 3-12-70 BY WKR ENGR Jim Vint CHK'D J.W.D

NAME WIRING DIAGRAM CONTROL-AUTO DEMAND

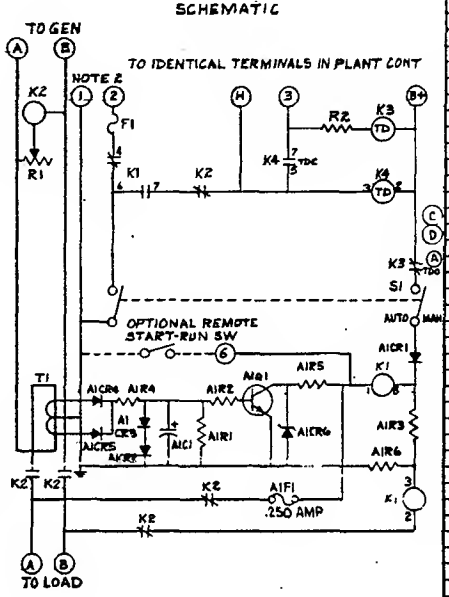
DWG NO. 617C143

617C144

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY.	DESCRIPTION
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	3D1B328D	2	BRACKET-MOUNTING
	51BA295	2	FASTENER-SNAP IN
K1	307AB5B	1	RELAY-START RUN
K2	307C667	1	CONTACTOR
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1-3/4" DF (B9B-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
	307A685	4	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A645(-01)	1	RELAY-TIME DELAY (20 SEC)
	307A689(-02)	1	RELAY-TIME DELAY (5 SEC)
	323A775	1	SOCKET ASSY
R1	304A682	1	RESISTOR ASSY-75D OHM. 25W
R2	304A192(REF)	1	RESISTOR-3 OHM. 10W
S1	308P8B(REF)	1	SWITCH-AUTO MANUAL
T1	315A346	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C552	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1B15	1	SILKSCREEN
	98A2252	1	SILKSCREEN-SCHEMATIC
	3D1B328J	1	TRIM
	51BP237	3	FASTENER-TRIM
	98A966	1	NAMEPLATE-CONTROL
			617C144
F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

NOTES:

1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

15.0HA-23/10C

15.0HA-23/12C

REV	REVISION	BY	CHK	DATE
E	REVERSED WIRES 2 & 3 ON K1	JD	JV	10-21-70
D	WAS 307A789	WB	JV	8-26-70
D	WAS 307A971	JD	JV	5-12-70
C	WAS 307B879	JD	JV	5-12-70
B	ADDED (REF)	JD	JV	5-8-70
B	ADDED 321P153 & 321-100	JD	JV	4-16-70
A	WAS 304A131	WB	JV	4-7-70

12VCRANKING

	MODEL NO.
-01	15.0HA-23/10C
-02	15.0HA-23/12C

120/240V 1PH 3W 50/60 CY

Onan — DIVISION OF STUDEBAKER CORPORATION, Minneapolis, Minn. 55

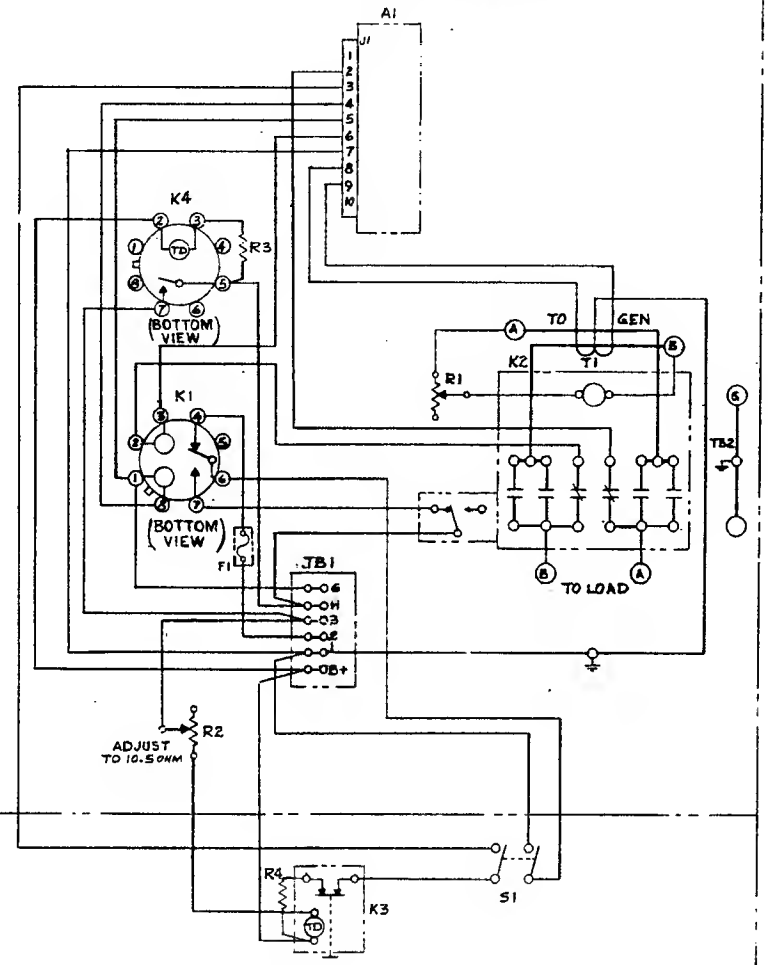
DATE 3-12-70 BY WKR CHKD JIM VUNT APP'D J.W.D.

NAME (WIRING DIAGRAM) CONTROL-AUTO DEMAND

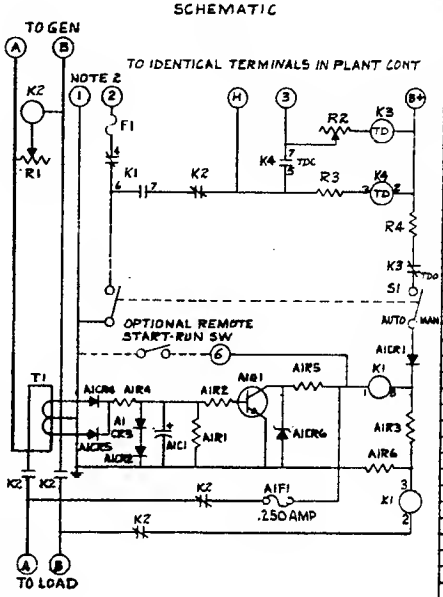
DWG NO. 617C144

617C145

WIRING DIAGRAM
FRONT VIEW OF CHASSIS



SCHEMATIC



REF. DES.	PART NO.	QTY	DESCRIPTION
A1	300B747	1	AMPLIFIER ASSY-LOAD SENSOR
	301B328D	2	BRACKET-MOUNTING
	518A295	2	FASTENER-SNAP IN
K1	307A858	1	RELAY-START RUN
K2	307C667	1	CONTACTOR
	160-144	2	STRAP
	307A942	2	BUS BAR
		2	SLEEVING 1-3 4"OF (B9B-22)
	332-142	4	TERMINAL
	309A42	1	SWITCH-AUXILARY
	309A193	1	INSULATOR
	307A685	4	JUMPER
K3	320B104	1	RELAY-CRANKING LIMITER
K4	307A879(-01)	1	RELAY-TIME DELAY (20 SEC)
	307A971(-02)	1	RELAY-TIME DELAY (5 SEC)
	323A773	1	SOCKET ASSY
R1	304A682	1	RESISTOR ASSY-750 OHM 25W
R2	304A222	1	RESISTOR-15 OHM 50W
R3	350-520(REF)	1	RESISTOR-47 OHM 1 2W
R4	350-984	1	RESISTOR-750 OHM 2W
S1	308P88(REF)	1	SWITCH-AUTO MANUAL
T1	315A346	1	TRANSFORMER ASSY-CURRENT
TB1	332A699(REF)	1	TERMINAL BLOCK
	332A940	1	MARKER STRIP
TB2	332-142	2	TERMINAL-GROUND
W1	338C553	1	WIRING HARNESS
	301D3273	1	CONTROL BOX
	98C1815	1	SILKSCREEN
	98A2252	1	SILKSCREEN-SCHEMATIC
	301B3293	1	TRIM
	518P237	3	FASTENER-TRIM
	88A966	1	NAMEPLATE-CONTROL
			617C145
A F1	321P153	1	FUSE, 3 AMP
	321-100(REF)	1	BLOCK-FUSE

NOTES:
1. OPERATE WITH NEGATIVE GROUND ONLY.
2. IT IS NOT NECESSARY TO CONNECT TERMINAL 1 TO GEN BECAUSE GEN & CONTROL ARE CONNECTED THRU AC GROUND LEAD.

15.0HA-23-4/10C

15.0HA-23-4/12C

B	REVERSE WIRES 2&3 ON K1	JD	JV 10-21-70
A	SEE 321P153 & 321-100	JD	JV 4-15-70
LTR	REVISION	CHK	DATE

Onan DIVISION OF STUDEBAKER CORPORATION

32V CRANKING

MODEL NO.	
-01	15.0HA-23-4/10C
-02	15.0HA-23-4/12C

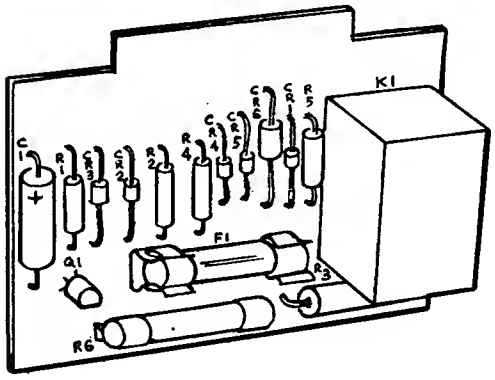
DATE 3-12-70 DR. WKR TRACE FROM JWD

WIRING DIAGRAM
CONTROL-AUTO DEMAND

120/240V 1PH
3W 50/60 CY

DWG. NO. 617C145

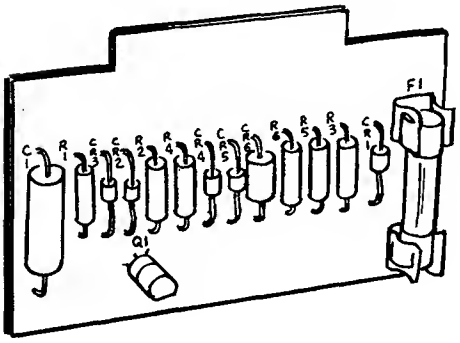
300B740, 300B741 AND 300B743 PRINTED CIRCUIT BOARDS (FOR 2-WIRE CONTROLS)



COMPONENT	PART NUMBER		QTY. USED	DESCRIPTION
R1	350-540	(p.c. board 300B741)	1	Resistor, 2.2 K ohm
	350P548	(p.c. board 300B740, 300B743)	1	Resistor, 10 K ohm
R2	350-528		1	Resistor, 220 ohm
R3	352A111	(p.c. board 300B740, 300B743)	1	Resistor, 47 ohm
	352-119	(p.c. board 300B741)	1	Resistor, 100 ohm
R4	350-520		1	Resistor, 47 ohm
R5	350-538	(p.c. board 300B743 only)	1	Resistor, 1.5 K ohm
R6	352A156	(p.c. board 300B743 only)	1	Resistor, 150 ohm
C1	356A9		1	Capacitor, 10 mfd
CR1 - CR5	357A4		5	Diode, 400 MA
CR6	359A18	(p.c. board 300B743)	1	Diode, Zener
	359A29	(p.c. board 300B740, 300B741)	1	Diode, Zener
F1	321-168		1	Fuse, 1/4 ampere
K1	307A1087		1	Relay, Dual Coil
MP1	332B1299	(p.c. board 300B740, 300B741)	1	Board, Printed Circuit
	332B1304	(p.c. board 300B743)	1	Board, Printed Circuit
Q1	362A7	(p.c. board 300B740, 300B741)	1	Transistor, Signal
	362A14	(p.c. board 300B743)	1	Transistor, Signal
	321P163		2	Clip, Fuse

NOTE: Components R5 and R6 on p.c. board 300B743 only.

300B747 PRINTED CIRCUIT BOARD (FOR 3-WIRE CONTROLS)



COMPONENT	PART NUMBER	QTY. USED	DESCRIPTION
R1	350-540	1	Resistor, 2.2 K ohm
R2	350-528	1	Resistor, 220 ohm
R3	350-528	1	Resistor, 220 ohm
R4	350-520	1	Resistor, 47 ohm
R5	350-524	1	Resistor, 100 ohm
R6	350-528	1	Resistor, 220 ohm
C1	356A9	1	Capacitor, 10 mfd
CR1 - CR5	357A4	5	Diode, 400 MA
CR6	359A29	1	Diode, Zener
F1	321-168	1	Fuse, 1/4 ampere
MP1	332B1308	1	Board, Printed Circuit
Q1	362A7	1	Transistor, Signal
	321P163	2	Clip, Fuse